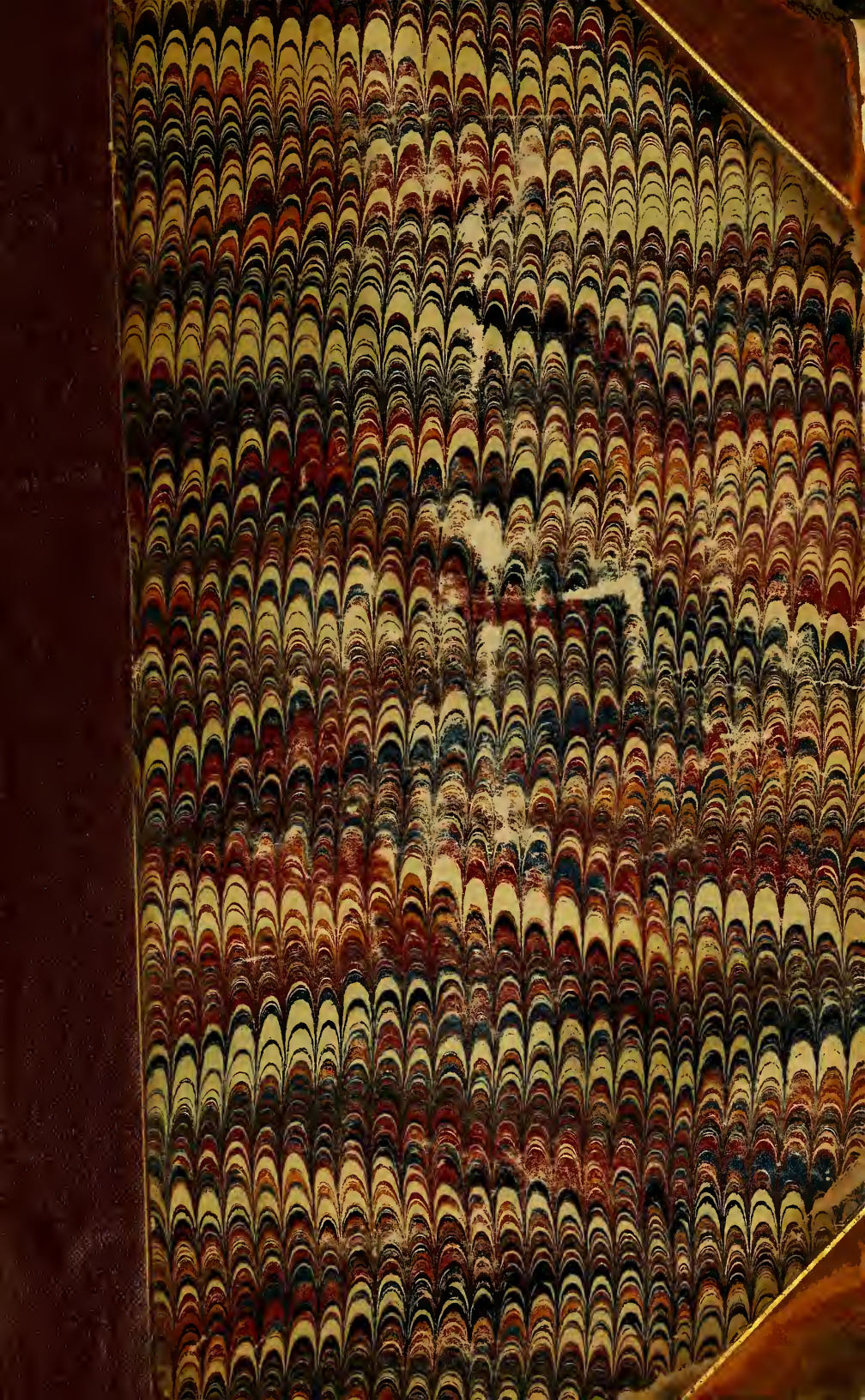
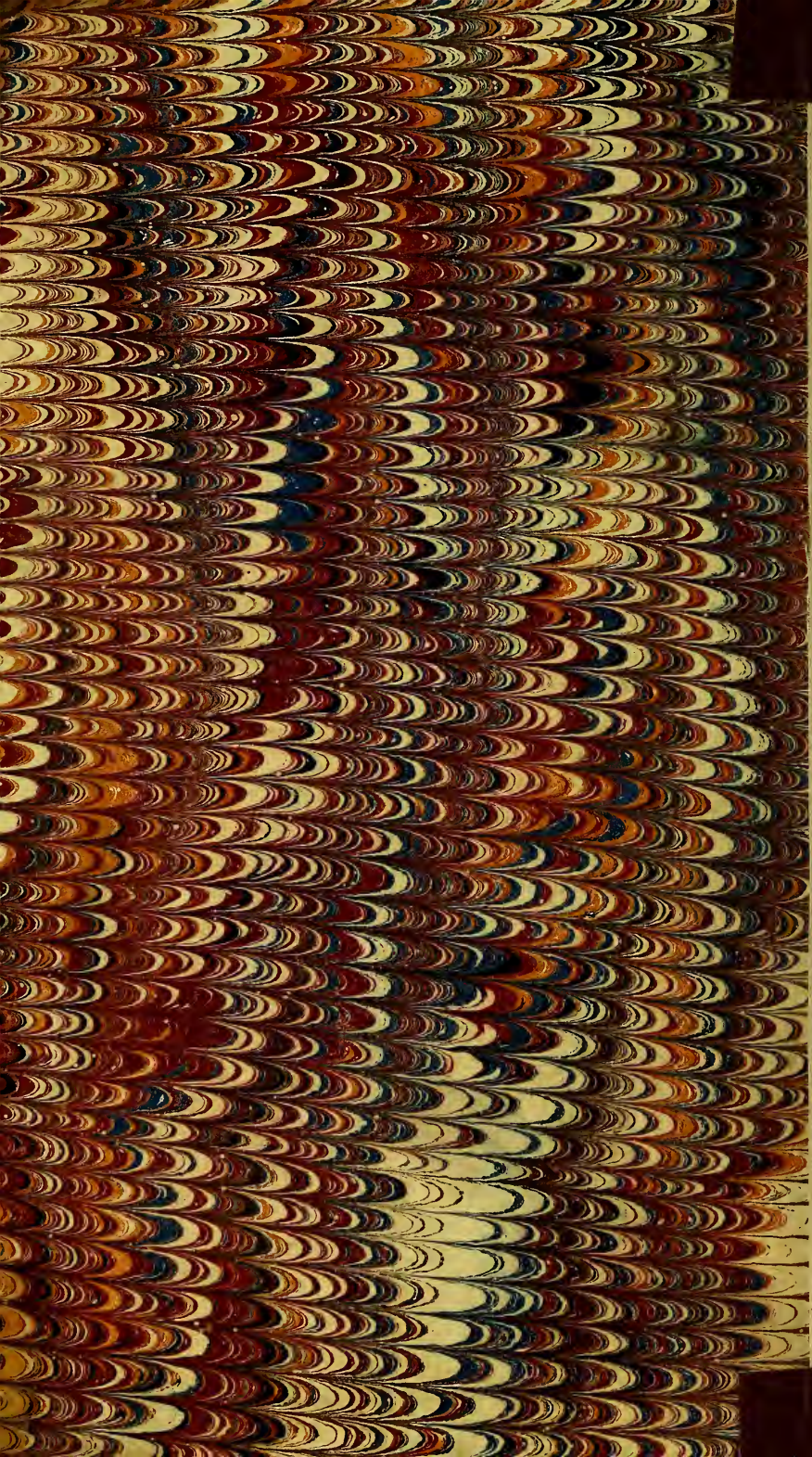


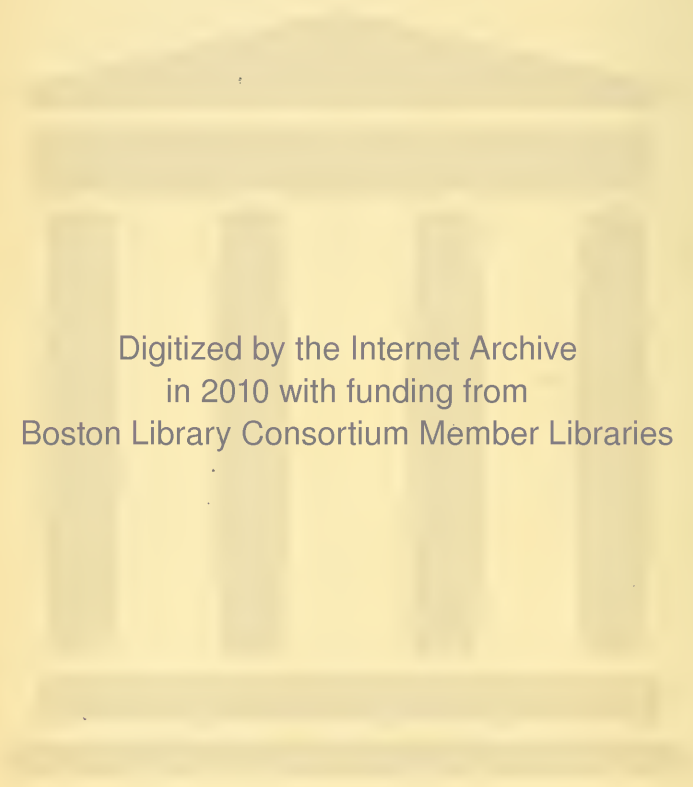






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AN
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SECT. VI. *Coursing, Simple or Unmatched.*

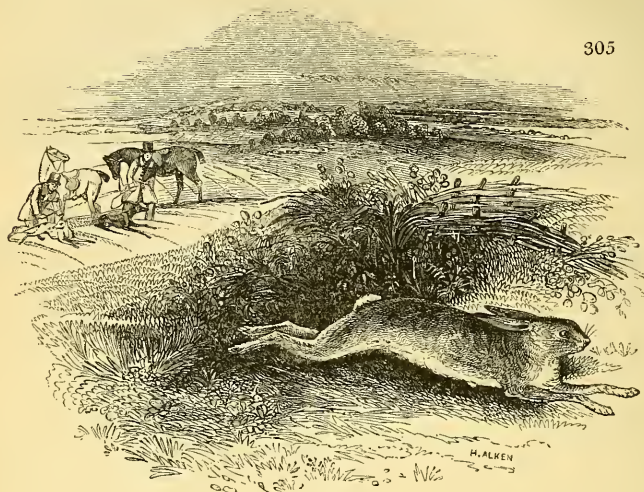
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UNMATCHED COURSING.

1996. *The practice of coursing* was originally thought sufficiently interesting of itself, without requiring the additional stimulus of matching the dogs of different individuals against each other, and rewarding the victors with prizes. Ovid thought the subject of a single handed course sufficiently attractive to call forth the powers of his pen, in language equally descriptive and poetical. Coursing thus pursued is not fettered with difficulties of awards displeasing to individuals, nor of the loss of the credit of a favourite dog being made public. It contains within itself sufficient interest to be undertaken alone, and it also affords amusement for several where the liberal principle is acknowledged, that pleasure is increased by being shared. It is an old adage, that, "Whatever is worth doing at all, is worth doing well." Thus private coursing, equally with public or match coursing, should be conducted in a true sportsmanlike manner; and even where a strict attention to *minutiae* is dispensed with, yet all essential points, as the goodness of the dogs, their condition for running, &c. should be attended to. Nor should private coursing ever be conducted with less fairness towards the game than is allowed in match coursing. It should not be said of any one that he waged war on unequal terms against an inoffensive animal by *short law*, or by using more than a brace of greyhounds. We have heard of a leash so employed, which cannot be considered either fair or sportsmanlike. Turberville even says, "That (three greyhounds to one hare) is seldom scene, and a brace of dogges is enow for such a poor beaste." He also requires fair law for the hare, as "twelve score yards, or more, according to the ground or country where she sitteth." Listen to this, brother coursers, and stain not your hands with innocent blood, for unfair sportng is a sort of murder—it is at least malice prepense; and if this serious charge will not prevent you, let the odious name (accursed among true sportsmen) of *pot-hunter* deter you from any unfair practices. When a hare is found on her form, would it not be disgraceful to put her up without withdrawing the dogs to a fair distance; for without a fair start the match between the dog and his game is unequal. He is all expectation, the poor hare is "all in a maze," and we well know that she cannot, as Paddy would say, at once know how to "handle her legs." A gravid hare can often get away from harriers, but her chance is small against greyhounds: such a course therefore would savour of poaching, or at least of a total disregard of fair play. To keep up the reputation of a truly fair sportsman, no animal should be pursued, except such as under a natural state of the objects, *i. e.* the pursuers and the pursued, are nearly on a par. It is admissible, on the part of the sportsman, by the exercise of his *intellectual powers* to increase the chances in his favour, by cultivating the *natural powers* of the animals he calls in to aid him in his pursuit; but to go beyond this is certainly disgraceful to his character and to the sport itself. Fearing that these remarks may be considered as affected on our parts, and be said to savour of a pseudo humanity, we request the reader's attention to Arrian on the same subject, as quoted by Mr. Thacker in Rule 2. p. 596. The generous Patlander says, "fair play is a jewel," and he is right; in all our dealings with our friends, or with those creatures Providence has given us rule over, let no unfair advantages be taken against them. We challenge the candour of the sportsman, did he ever at all entrench on this principle without some compunctious feelings, and severe ones too. To enter further into detail on the practice of simple coursing we deem unnecessary, as in every essential it is the same with that we have already described. The courser either enters the field with his dogs only, himself being mounted or dismounted, or he may have a friend or two in company; in which latter case they separate, and carefully beat the ground over, being followed by the dogs. Some take a servant with them, who has the dogs in slips, which he does not loosen until called to by his master, whose call is made sooner or later, according to the nature of the ground, and the proximity or remoteness of cover. Others in their private coursing

employ a hare finder, who having noted one, two, three, or more hares in form, the master either alone, or accompanied by friends and neighbours, sets forth pretty certain of sport. There may be luxury in this, and it may suit the idle; we, however, appeal to the feelings of most of those sporting readers who may honour these pages with their perusal, whether they enjoy the *kill* of a hare when found *for them*, half as much as when, in the true character of sportsmen, they have gone forth, and having found their own hares, have *fairly* coursed them down, or have seen them escape, to offer diversion for another day.



COURSING.

PART VI.

FALCONRY, OR HAWKING.

1997. *This sport* was once the all prevailing pursuit of kings and princes, and no less so of ladies "fair." The enamoured knight, in times gone by, was wont to woo with his hawk on his hand; and the gift of one of these birds was a pledge between high-born lovers. The knight of chivalric fame would sooner part with his life than his hawk; and a cast of noble falcons was equal to a king's ransom. On account of historical associations, if for no other reason, we hope that we need no apology for any zeal in favour of falconry, or for our detail of its practice which is to follow.

1998. *Falconry and hawking are almost synonymous terms*; yet it is hardly possible to separate them, or to exclude either without injury; so that were we inclined to hinge our matter on one of these names only, it would require a more erudite head than our own to decide on which the lot ought to fall. The term *falcon* is apparently of French derivation; that of *hawk* is probably Saxon, and both are expressed in the Latin by *accipiter*. Falconry! the very sound of the word is lofty, and it really has the savour of high breeding about it; for not only were its winged agents the chosen companions of kings, princes, and nobles, but nature herself had already stamped them, ere the selection was made, with distinctive characters of prowess and high bearing. Hawking! This term is certainly less sonorous, but it appears to have equal claims with its partner to the "rust of time," those high prized crumbs that give inestimable value to a *mite* with an *eruginous* crust (what would not be given for a veritable *obulum* that had crossed the palm of Belisarius?), and raise the value of the autograph of some ancient worthy beyond the promissory note of any man *alive*? The terms *hawk* and *hawking*, having been much more extensively and more significantly,

although sometimes erroneously used, than those of falcon and falconry even, imperatively forbid our omission of them, notwithstanding the more aristocratic claims of falcon and falconry. In the popular portions of our descriptions, both of falcons and hawks, as well as when we treat of the practice of falconry, we shall employ the phraseology common among falconers, and use hawk and falcon as synonymous. But in our systematic descriptions of these birds of prey we shall nevertheless endeavour to rectify the real misnomers, and to place the several individuals in the situation assigned to each by naturalists.

1999. *The connection between the sports of the field and the feathered races* which are found there, is too intimate not to make the study of their forms, habits, and properties, highly interesting to the sportsman, exclusive of the amusement which the pursuit of them affords. Nor is it difficult to prove that only a moderate acquaintance with ornithology would double his pleasures and lighten his toils.

CHAP. I.

THE SYSTEMATIC HISTORY OF BIRDS.

2000. *System forms the best foundation for every superstructure which the human mind builds.* The systematic arrangement of twenty-four letters forms the medium of communicating all that is known. Systematic zoology is the A B C of him who wishes to acquire a competent or a communicable knowledge of the living objects around him; and ornithology is that branch of zoology which treats on birds.

SECT. I. *The Progress of Ornithology as a Science.*

2001. *To enumerate all the writers on ornithology*, would force on us the notice of every one who has signalised himself as a writer on general zoology, from Aristotle to the present day. We shall, therefore, briefly glance at the labours of such only as have especially furthered the particular department of Natural History which treats on birds.

2002. *Aristotle himself notices birds as carnivorous, granivorous, and polyphagous.* He also tells us that some take their food on land, and some on the water. His observations also extended to their migrations, their habitations, food, and manners; but the sum of his writings can be considered as little more than an incentive to future labours in the same field. Pliny, as an author, was fanciful and interesting in the extreme; but as he wrote all that he heard, as well as all that he saw, few of the present day venture to repeat after him. In 1556 Belon of Mans, a native of France, published his systematic arrangement of birds, founded on their forms, properties, and modes of subsistence, and sprinkled also with some anatomical comparisons between their structure and that of *Mammalia*. His arrangement of birds of prey is excellent, and is even yet followed; but he was led into some incongruous grouping, by classing some of them according to the position, form, and material of their nests. Aldrovandus added something to the common stock, as did Gesner also. Johnson chiefly compiled from others.

2003. *The Ornithologia of Willoughby is principally grounded on external characters*, among which the forms of the beak and feet furnished him with lines of division: he also followed Belon in grouping them from their habits and their methods of subsistence. He classed birds into twenty divisions, eighteen of which are composed of terrestrial birds, and two are the aquatic. Ray, in his *Synopsis*, principally adopts the divisions of Willoughby; he however enlightened the subject by some valuable remarks on the internal structure of birds, and he likewise formed some new characters from the number of feathers in the tail.

2004. *The Linnæan system of ornithology* succeeded to that of the contemporaries of Ray, and by its fascinations of exhibiting the affinities which unite the larger groups of animals, for some time it threw a shade over the more natural methods of investigation; which methods, however, if pursued with extensive research, and if accompanied with copious induction, certainly lead to the acquirement of knowledge beyond all others. But, on the contrary, should the natural method lead to a total neglect of that precision apparent in Linnæus, which at least made his *indices* the grammar of zoology, then future naturalists will stand in the predicament of one who observes for himself alone, and who, without any direct medium of communication with others, can neither receive nor impart knowledge.

2005. *The names of Buffon and Pennant*, as interesting writers, must not be passed over; and if it was not their fate to add much to systematic ornithology, yet it must be allowed that one, by the warmth of his descriptions, and the other, by his method of rivetting the attention, have each acquired a fair claim to be considered as an ornament to his own country. Mr. Pennant, with some trifling alterations, has adopted Ray's scheme of arrangement.

2006. *Dr. Latham* also ranks as a zealous ornithologist, and his *General History of Birds*, which consists of eleven quarto volumes, with plates etched and coloured by himself, affords ample proof of his industry and attachment to the subject. This patriarchal naturalist is only lately deceased, at the advanced age of ninety and odd years. *Dr. Latham's* classification was essentially Linnæan.

2007. *Colonel Montague's Ornithological Dictionary* offers, likewise, one of the best illustrations of the knowledge which may be gained by the exertions of one individual, and the interest which may be excited in others by the observations made by what has been expressively called an "out-door naturalist." This respectable writer, without being a slave to the trammels of system, has added much to our knowledge of birds; and the second edition of his work, published two or three years ago, under the editorship of that accomplished naturalist, *Mr. Rennie*, will still further add to our stores. In our humble opinion the introductory matter prefixed to the work presents a well arranged outline of the past and present state of ornithology. We need not, we presume, remind the reader, that it was to this gentleman we are indebted for those interesting little tomes in the *Library of Entertaining Knowledge*, under the title of *The Architecture of Birds*. The names of *Shaw*, *Albin*, *Donovan*, *Lewin*, *Turton*, *Lacépède*, *Duméril*, *Blumenbach*, *Vaillant*, *Edwards*, *Bewick*, *Selby*, *Griffith*, *Vigors*, *Fleming*, *Swainson*, *Wilson*, *Jardine*, &c. &c. stand also as eminent contributors to this branch of zoology. As regards the graphic display of the natural figures of birds, we recommend attention to the masterly work of *Mr. Audubon*, which has been so highly eulogised by that accomplished and critical naturalist, *Mr. Swainson*. It would also be a signal injustice to our subject, and to writings at once popular and inductive, were we to omit the mention of those of *Mr. Mudie*, whose felicitous method of instruction is strikingly apparent in all he has written on the matter in hand. Nor can we refrain from particularly noticing the late instructive volumes on ornithology in the *Cabinet Cyclopædia* of *Dr. Lardner*, from the pen of *William Swainson*, Esq. as invaluable additions to science.

SUBJECT. 1. *The Cuvierian Division of Birds into Orders with Subdivisions and Examples of Species belonging to each.*

2008. *We have heard it objected to*, that as a bird is only an animal that flies, whereas beasts walk and run, that therefore there is little room for much systematic arrangement of them. The naturalist, on the contrary, encourages a very different sentiment; he regards them as the tenants of the skies, and as exhibiting in their aerial voyaging a speciality of structure that no artifice of man or beast can imitate. *Cuvier* has given to the study of ornithology a new spur, and, has paved the road to it with new incitements, while these oviparous vertebrated animals, having both a double circulation and a double respiratory apparatus also, excite our admiration, and increase our wishes to become more intimately acquainted with their relative location in the ornithological scale of this great master.

I. With strong hooked beak and claws:—

Birds of prey { 1. Flying by day. — Example: eagles, hawks, vultures, &c.
2. Flying by night. — Example: owls, &c.

II. With two toes or claws before and behind:—

Example: climbers — woodpeckers, cuckoo, parrots, &c.

III. With a strong thick bill, nostrils large, and covered by a cartilaginous scale, and toes partly united at their base:—

Gallinaceous { Example: peacocks, pheasants, common fowls, partridges, pigeons, &c.

IV. Without the characters of any of the preceding:—

Passerine	{	1. With the beak notched on either side	{	butcher birds, flycatchers, chatters, thrushes, nightingales, warblers, &c.
		2. With the mouth opening very far back	{	swallows, goatsuckers, or rather night-jars, larks, titmice, buntings, linnets, starlings, rooks, hoopers, creepers, humming birds, kingfishers.

V. With long naked legs:—

Waders	{	1. With wings unfitted for flying	{	ostrich, emeu, cassowary.
		2. With very short or no hind toe	{	bustards, plovers, lapwings.
		3. With a long, broad, strong, and generally sharp beak	{	cranes, herons, storks, spoonbills, &c.
		4. With a long, slender, curved beak	{	curlews, snipes, woodcocks, &c.
		5. With very long toes, bordered by membrane	{	ralls, water-hens, coots, flamingoes, &c.

VI. With webbed feet:—

Swimmers	{	1. With the legs very near the tail	{	divers, auks, penguins, &c.
		2. With very long, powerful wings	{	petrels, albatrosses, gulls, pelicans, cormorants, &c.
		3. With a large fleshy tongue, and a thick beak, covered with softish skin, and finely notched at the edges.	{	swans, geese, ducks, &c.

SUBJECT. 2. *The Linnæan Arrangement of Birds.*

2009. *Birds form the second grand division of the Linnæan system of the animals; and are characterised by having the body covered with feathers. The Linnæan orders are six:—*

1. *Accipitres* (*accipiter*, a hawk; hawk kind, or birds of prey). Bill and claws strongly arched (*a*, fig. 306.).

2. *Picæ* (*pica*, a magpie; magpie kind, or peckers). Bill compressed, a little curved (*b*).

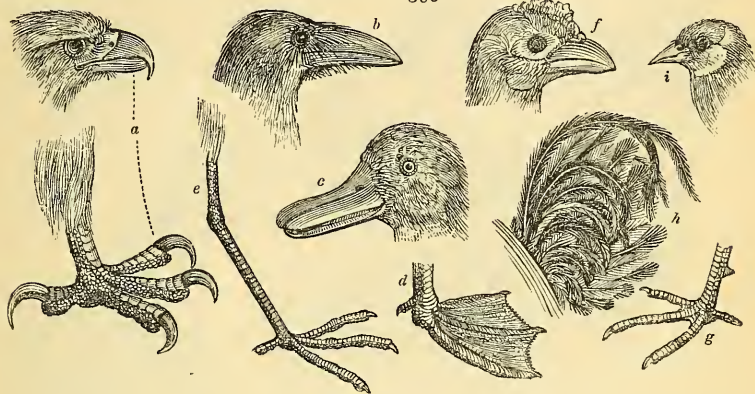
3. *Anseres* (*anser*, a goose; of the goose kind). Bill obtuse at the end (*c*); feet webbed (*d*).

4. *Grallæ* (*grallæ*, stilts; stalkers). Legs very long (*e*).

5. *Gallinæ* (*gallus*, a cock; pheasant kind). Bill convex, the upper mandible arched (*f*); toes connected by a membrane at the bottom (*g*); tail feathers more than twelve (*h*).

6. *Passeres* (*passer*, a sparrow; sparrow kind). Bill conic, pointed: nostrils oval, broad, naked (*i*).

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LINNÆAN ARRANGEMENT OF BIRDS.

2010. *Pennant arranged birds into two divisions, viz. land birds and water birds. These he subdivided into nine orders, of which the land birds formed six, viz. rapacious, pies, gallinaceous, columbine, passerine, and struthious; and the water birds three, viz. cloven-footed or waders, pinnated-footed, and web-footed. Brisson arranged birds into two grand divisions, viz. cloven-footed and web-footed. In the first are 17 orders and 85 genera; in the second, 9 orders and 28 genera. Dr. Latham's arrangement is as follows:— First division: Land birds, Terrèstres. — Order 1. *Accipitres*, or rapacious; 2. *Picæ*, pies; 3. *Passeres*, passerine; 4. *Columbæ*, pigeons; 5. *Gallinæ*, gallinaceous; 6. *Struthiões*, struthious. Second division: Water birds, *Aquaticæ*. — Order 7. *Grallæ*, waders; 8. *Grallæ-pinnatipedes*, waders with pinnated feet; 9. *Palmipedes*, web-footed. The number of genera in the Linnæan arrangement is 78, and of species 930. The species described by Dr. Latham amounts to about 5000. The number of Dr. Latham's genera is increased by his having divided some of the genera of Linnæus into two or more genera." (*Magazine of Natural History*, p. 121.)*

CHAP. II.

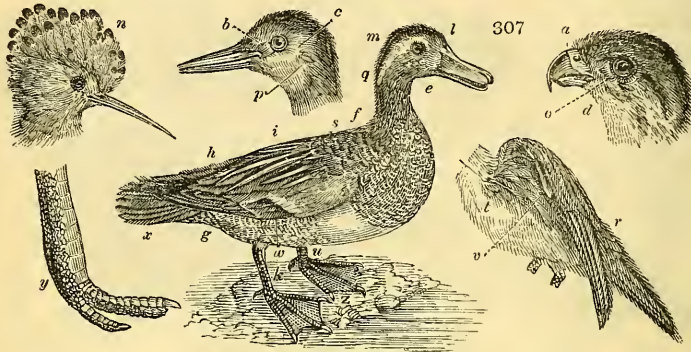
THE STRUCTURE AND FUNCTIONS OF BIRDS.

2011. *We cannot but suppose that the sportsman, who receives so much pleasure from bringing these animals to bag in the field, does occasionally also, when dismembering them at his table, feel some curiosity with regard to the construction and functions of the several parts of the body of the bird as they appear before him. Nor can we doubt but that the parallel we have already drawn, between the framing of the winged race not only with his own but with that also of quadrupeds and reptiles, must awaken a wish to inquire into this wonderful harmony in the scheme of nature, that creates living creatures so apparently discordant on one common model. Should these hints at all tend to engage our sporting friends in such an inquiry, we will not pay either them or ourselves so bad a compliment as to suppose that they will stop short of accompanying us throughout our ornithological detail, which, however it may leave much untold, shall at least point out where all the rest may be obtained.*

SECT. I. *External Parts of the Body of Birds.*

2012. *The external parts of birds are feathers, horn, and some naked skin.* Our detail of the external anatomy of animals generally has already described the cuticular and membranous expansion, called the skin of birds; it also noticed the feathers, bills, claws, and spurs, as integumental appendages. Feathers being, however, the distinguishing character which separates birds from all other animals, will engage a little more of our attention as soon as we have introduced the conventional terms used in the study of ornithology.

2013. *Terms used in ornithology.* To a ready understanding of this branch of Natural History, and of the works treating thereon, it is necessary that a table of the terminology made use of in the descriptions of birds should be laid before the reader (*fig. 307.*).



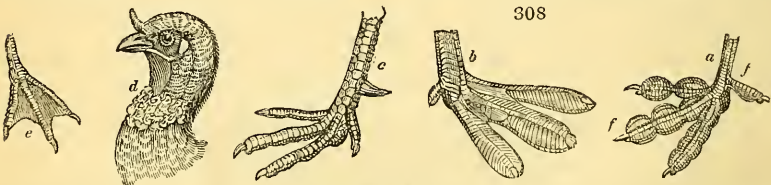
TERMINOLOGY OF BIRDS.

Terms used in Ornithology.

Câput, the head.
Rôstrum, the bill.
Nâres, the nostril.
Cêra, wax on the bill (*a*, *fig. 307.*).
Lingua, the tongue.
Capûstrum, the face.
Ldruum, the lore (*b*).
Têmpora, the temples (*c*).
Bârba, the beard (*d*).
Gûla, the chin (*e*).
Hûmeri, the shoulders (*f*).
Crissum, the vent (*g*).
Têctrices, the wing coverts (*h*).
A'lula spûria, bastard wing (*o*).
Spêculum, the wing spot (*w*).
Scapulâres, scapulars (*i*).
Caûda, the tail.
Têctrices caudæ, the tail coverts (*x*).
Crûra, the legs (*k*).
Fêmore, the thighs.
Tridâctyli, three-toed.

Didâctyli, two-toed (*y*).
Pes, the foot.
Natatôrius, palmated feet (*z*).
Frons, the forehead (*l*).
Vêrtex, the crown.
O'cciput, the hind-head (*m*).
Crista, the crest (*n*).
O'culi, the eyes.
Supercîlia, the eyebrows.
O'rbitæ, the orbits (*o*).
Gênæ, the cheeks.
Aûres, the ears (*p*).
Côllum, the neck.
Nûcha, the nape (*q*).
Jûgulum, the throat.
U'ropygium, the rump (*r*).
Interscapûlum, between shoulders (*s*).
Axillæ, axillaries (*t*).
Hypocôndriæ, hypocondriæ (*u*).
Côrpus, the body.

Dôrsum, the back.
Pêctus, the breast.
Abdomen, the belly.
Ambulatorii, walking.
Scansôrii, climbing.
A'læ, the wings.
Rêctrices, the tail feathers.
Armillæ, bracelets.
Digitî, the toes.
Gressôrii, leaping.
Prêhensilis, grasping.
Lobâtus, lobed feet (*a*, *fig. 318.*)
Pinnatus, pinnated (*b*).
Calcâria, the spurs (*c*).
Carunculæ, wattles (*d*).
Ingluvies, the crop.
Semipalmatus, semipalmated feet (*e*).
U'ngues, the claws (*f*).
Crurua, the horns.
Saccus jugularis, the pouch.

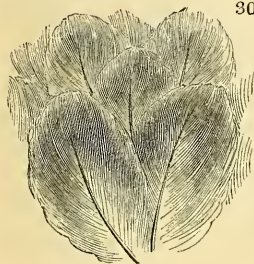


TERMINOLOGY OF BIRDS.

2014. *Feathers are of two sorts*: by one the body is assisted in its motions, and by the other it is protected from cold and other external injuries. Neither the anatomy, nor the uses to which these two varieties are applied, are however so definite, but that both their fabric and uses are somewhat blended. We find every feather composed of a quill, transparent, and tubular towards the base, terminating in a solid light substance, sub-quadrangular, and covered with a prolongation of the horny tubular portion. To use the words of Mr. Griffith,—"From each side of the quill issue parallel laminæ, not flat, as they appear to the unassisted eye, but semi-tubular; having, on their outward edge, a series of bristles, set in pairs opposite one another, which clasp with the bristles of the approximate

laminae, and cause that adhesiveness observable between the several laminae of the vane, and that readiness to reunite after they have been forcibly separated. These bristles are not of the same form on each side of one lamina, the lower tier forming a simple and slight curve, while the upper terminates with three or four little hooks, which serve to catch the simple corresponding bristle of the next lamina." (*An. King.* vol. vi. p. 105.) It must be evident that this infinity of minute tubes, when filled with air, must have a direct tendency to render the bird buoyant. This effect is also greatly assisted by the placing of the feathers on the body, which Mr. Mudie, in his *Natural History of Birds*, observes, "is such as always to present a smooth surface upwards and forwards, so that the animal can move in either of these directions, with very little resistance from the friction of the air. When it moves in either of them, the resistance of friction does not increase so rapidly as the rate of motion, because the pressure smooths the feathers, and causes the air to take less hold on them. This property, which arises in part from the texture of the upper surface of the feathers, but chiefly from the way in which they are formed and placed, is of equal service to birds, when they must perch, or otherwise remain at rest, so as to abide the blast, as when they fly exposed to it. When either perching or flying, a bird in the wind always faces the current, and so offers the least resistance to it, both by its form and its feathers." (P. 37.) Thus, when the wind is high, the gunner steals up-wind on the wood-pigeon, who, in such weather, always perching in face of the blast, is insensible both to the sound and scent of his enemy. It is this arrangement of the feathers, likewise, which makes it so difficult to shoot wildfowl, whose plumes, being both thick and numerous, are almost impenetrable unless they be struck from behind.

2015. *The feathers designed principally for clothing*, however varied they may be in form and placing to those we have just described, yet exhibit an equal capability of adaptation to



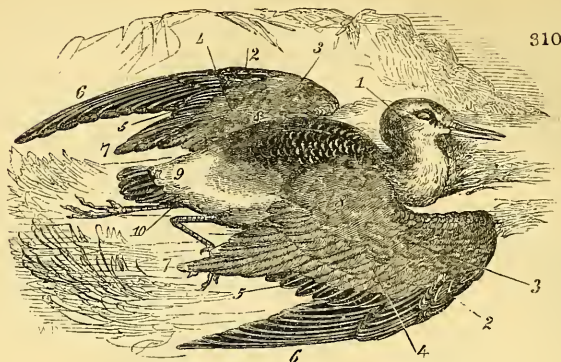
IMBRICATED FEATHERS.

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the purposes we have hinted at. They may be said to be set in an imbricated manner over the body, the termination of one forming the basis of two others, as seen in *fig. 309.*, at the same time having their outer surface laminated, but their under surface downy. It is, however, necessary to do justice to the subject to observe, that the skin itself under these feathers is likewise studded with fine plumose particles of a downy texture, with which the like surface of the clothing feathers unites and adheres, so as to form together a wrapper warmer than the finest lamb's wool dress. To complete this admirable tunic the *coverts* (feathers so called) are seen curving around the body, so as to perfectly deny access to either wet or cold. We cannot help requesting the reader again to look over this account, and to apply the remembrance of it to every bird he meets with; and if he be at

all alive to admirable design, he will see it here; and, so observing, can never forget either the bird or the maker of that bird. It is needless for us to remark much on the tints which present themselves in the clothing feathers of birds, they being so varied as to defy critica. description: we shall, however, just observe, that a metallic lustre is frequently seen over the surfaces, and most on those most exposed to the action of the elements. The feathers of birds of every kind are, indeed, to a certain degree waterproof; but those of aquatic birds are more decidedly so. An oily secretion in them, particularly, is pressed from orifices near the base of the tail, which being forced out between the mandibles, is passed over the feathers by the same means; and the oil thus partially smeared, is spread more evenly over the body by means of the head. This process, called *preening*, every one who has ever watched ducks by the side of a pond, must be familiar with; and the matter offers us another opportunity of pointing out how simply, but how effectively, all the wants of animals are supplied. The feathers of birds differ extremely in many respects from each other: in birds of prey they are strong and decided, yet each year varies their colour, though it leaves the peculiarity of figure nearly the same. There are considerable differences observable also between the feathers employed in protecting the body from cold, and hence called clothing feathers, and those by which flight is operated. These latter are much longer and stronger, as well as more structurally perfect, as on them the most important actions of the life of the animal depends. By them it extends its flight in search of food; by them it pursues its prey, or retreats before a stronger foe. Most birds own three varieties of feathers: first, those which are concealed from sight, of a downy texture, and well fitted to sustain the heat of the body; second, those more external, which we have just exhibited as imbricated in their placing; those which sustain the body in its flight form the third variety, and are seen fully developed in the wings and tail. Each of these feathers are composed of a downy portion close to the insertion of the feather into the body; and of a second kind, which is webbed or laminated; third, of a pointed hollow portion, known as the quill, and which is inserted into the body. Almost the whole feathered portion, which is not immediately exposed, is white, while the exposed parts are diversified in their colourings.

SUBJECT. 1. *Technical Terms used by Ornithologists in their Descriptions of the external Parts of Birds.*



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TECHNICAL NAMES OF FEATHERS

2016. *The feathers, which cover the body* receive appellations according to their situation as follows, are exemplified in *fig. 310.* on the body of a snipe: — 1. *Auriculars*, feathers which cover the ears. 2, 2. *The bastard wing*, covered with three or five quill-like feathers, placed at a small joint rising at the middle part of the wing. 3, 3. *The lesser coverts of the wings*, small feathers that lie in several rows on the bones of the wings. *The under coverts* are those that line the inside of the wings. 4, 4. *The greater coverts*, the feathers that lie immediately over the quill feathers and the secondaries. 5, 5. *The primaries, or primary quills*, the largest feathers of the wings; they rise from the first bone. 6, 6. *The secondaries, or secondary quills*, those that rise from the second bone. 7, 7. *The tertials*. These also take their rise from the second bone at the elbow joint, forming a continuation of the secondaries, and seem to do the same with the scapulars which lie over them. These feathers are so long in some of the *Scolopax* and *Tringa* genera, that when the bird is flying, they give it the appearance of having four wings. 8, 8. *The scapulars, or scapular feathers*, take their rise from the shoulders, and cover the sides of the back. 9. *Coverts of the tail*. These feathers cover it on the upper side at the base. 10. *The vent feathers*, those that extend from the vent, or anus, to the tail underneath.

SECT. II. *The internal Structure of Birds.*

2017. *The bones of birds*, as of quadrupeds, sustain the soft parts, and will therefore first engage our attention. The general composition of bones, and the nature of their connecting *media*, have been already noticed. Their integuments and external appendages have likewise engaged some attention in our sketch of the *External Anatomy of Animals generally*, p. 169.

2018. *The air cells* in the bones of birds constitute a peculiarity which distinguishes them from the cellular receptacles of marrow in the bones of quadrupeds. The bones of birds may indeed be said to receive air in two ways; those of the head are filled by the mouth and nose, whereas those of the trunk and extremities are inflated from direct communications with the lungs. In their long bones an orifice for the purpose may be usually seen at the extremity of the bone. It is very apparent in *fig. 311.*, where a bristle is inserted to mark it. These receptacles answer important purposes; they are aerial reservoirs to supply the waste of air made while the bird is singing on the wing, or when rapidly flying; they also are stores for the separation of oxygen; and further, they greatly add to the buoyancy of the body, and which, in our opinion, was the chief office designed for them by the Great Architect of nature. Our description of the mechanism of the feathers shows them to be so formed and so placed that they offer but little resistance to progression; and, when we further add the admirable contrivance of rendering the whole mass more buoyant by inflation, and the admitting air throughout the cavities of the bones also, our surprise lessens at the phenomena of flight. It is the absence of these structural peculiarities in ourselves that effectually binds us to the earth. Mr. Mudie, in his *Nat. Hist. of Birds*, p. 40., notices a would-be human flier, who, in attempting to use a pair of artificial wings in descending from a barn escaped with his life, but with a full conviction that his frame was not essentially volant, even with the aid of artificial wings.

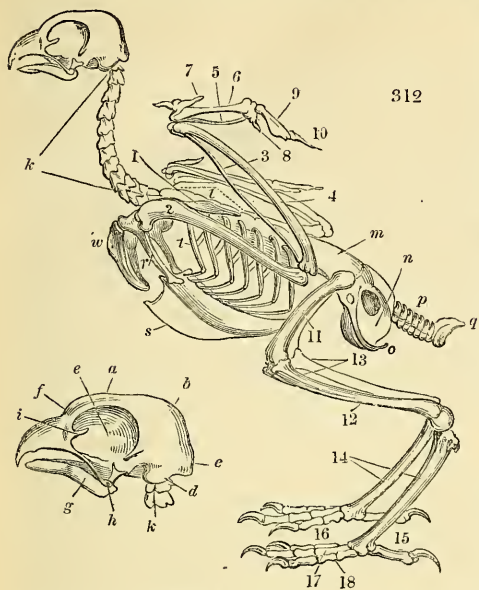


311

AIR CELLS.

SUBJECT. 1. *The Skeleton of Birds.*

2019. We have previously had occasion to remark on the uniformity of the general assemblage of bones in birds compared with that of the other classes of vertebrated animals. The



SKELETON OF FALCON.

uniformity in the skeletons of birds, as respects one another, is even more remarkable. Our exemplar (*fig. 312.*) is a portrait of the bones of a falcon, and was chosen by us as the most appropriate effigy to illustrate a treatise on hawking. The skull:—*a*, the frontal bone; *b*, the parietal; *c*, the occipital; *d*, condoloid portion of the occipital bone; *e*, the orbit; *f*, the nasal bone to which the bill is attached, and at which part the upper portion of the bill is movable from the nature of its connection with the nasal frontal and ethmoid bones; *g*, the zygoma, or cheek bone; *h*, the os quadratum, or square bone, by which the lower jaw is articulated with the skull; *i*, the superciliary process and bone peculiar to the *Accipitres*, or birds of prey; *k*, cervical vertebrae; *l*, the dorsal vertebrae; *m*, *n*, the pelvis; *o*, iliac portion of the pelvis; *p*, ischiatic portion of the pelvis; *q*, pubis, or share bone; *r*, caudal or tail vertebrae; *s*, the last caudal vertebrae; *t*, the furcula, or fork-bone, vulgarly called merry-

thought, a bone peculiar to birds; *s*, the sternum; *t*, the ribs; *w*, the clavicle, which, slender as it appears, is yet an important appendage to the skeleton, as without it birds that use the true walk would move with difficulty.

2020. *The wing, or upper extremity, is numbered as follows:*—1, scapula, or shoulder-blade, attached to a part of the clavicle; 2, humerus, or great arm bone; 3, and 4, radius and ulna, the two bones that form the fore-arm, which serves for an attachment to the secondary quill-feathers; 5, the carpal, or wrist bone; 6, the thumb; 7, metacarpal of the little finger; 8, metacarpal of the great finger of the wing; 9 answers to the metacarpal of the little finger; 10 marks the first and second phalanx of the great finger. It may be well to observe, that it is between the radius and ulna, and also between the two great metacarpal bones that ligatures are placed to save the lives of birds whose blood-vessels have been divided, the method of doing which will hereafter be fully explained. We shall again recur to the wings, as compared with the human arm, and also to the osteology of the falcon's wing as an organ of offence as well as of powerful flight.

2021. *The leg, or lower extremity* (11, *fig. 312.*), the femur or thigh bone; 12, the tibia; 13, the rudiments of a fibula; 14, the metatarsal bone,—the hock of quadrupeds being wanting in birds, its place is supplied by the upper part of the head of this bone; 15, the hind claw, or great toe; 16, 17, 18, the second, middle, and third toes.

2022. *The skull of birds*, it may be observed from *fig. 302.*, instead of being divided by sutures, has its different bony pieces consolidated, as it were, into one. In oviparous animals it is evident there was no necessity of sutures, to enable the head to accommodate itself to the passage through which it first entered the world, and consequently there are none. To give great freedom of motion to the head there is only one long protuberance, or condyle, to the occipital bone. The orbits (*e*) in birds, it will be observed, are of a remarkable size, and are separated from each other, either by a membranous, or by a thin bony septum, as the case may be. The superior maxilla, or jaw, which, it is well known, is immovable in quadrupeds, has, with few exceptions, some slight motion in birds. In the parrot tribe it is an individual bone, distinct from the rest of the skull bones, and is furnished with an articulation, by which means all the members of this vast family are seen to elevate the upper half of the beak, or bill, without displacing the lower. Here is seen an ingenious departure from a common model, to meet particular habits in the animal concerned.

2023. *The horny bill or beak of birds* is a very important organ, as we may be assured, by the great diversity of forms it assumes in different genera. Our leading line is worded

"the *horny bill*," but it must be taken into the account, that to every bill there is an osseous part also; a kind of bony core or base, formed by an elongation of the bones of the jaws. Bill and beak, as names, are by many used synonymously; but Mr. Mudie very properly observes, though all beaks may be called bills, all bills cannot be called beaks. We acknowledge the truth of this, though we may not, for the sake of general convenience, slavishly adhere to the distinction in our descriptions. The mandibles of falcons, hawks, and parrots, may justly be called beaks, from their solid texture, and from their general figure being adapted to the breaking of hard substances. The mandibles of birds of prey, as *true beaks*, will be more fully exemplified when we treat on them as connected with the practice of hawking. The *bill*, properly so called, is more diversified in figure, size, and substance, than the beak, because its adaptations are as numerous as the varieties of food which furnish support for different classes of omnivorous birds are multiplied. These diversities, in the form of the mandibles of birds, are of use also to the naturalist, as serving to furnish him with distinctive characters necessary to the classification of the objects of his study. How much also must these diversities inspire us who behold them with admiration, at so perfect an adaptation of form to the varied wants of the feathered tribes which use them! How few actions are there that the human tongue, teeth, and lips, can perform, that cannot be done also by means of the mandibles of a bird! "Instead," as Paley remarks, "of the fleshy lips and teeth of enamelled bone, there is to perform the office of both a hard substance (of the same nature with that which composes the nails, claws, and hoofs of quadrupeds) cut out into proper shapes, and mechanically suited to the actions which are wanted. The sharp edge and tempered point of the sparrow's bill picks almost every kind of seed from its concealment in the path; and not only so, but hulls the grain, breaks and shatters the coats of the seed, in order to get at the kernel. The hooked beak of the hawk tribe separates the flesh from the bones of the animals which it feeds upon, almost with the cleanness and precision of a dissector's knife; and by it the butcher-bird transfixes its prey upon the spike of a thorn, and then uses it in dexterously picking the flesh from its bones. In some birds of this class we have the cross-bill, *i. e.* both the upper and lower bills hooked, and their tips crossing. The spoon-bill enables the goose to graze, to collect its food from the bottom of pools, or to seek it amidst the soft and liquid substances with which it is mixed. The long tapering bill of the snipe and woodcock penetrates still deeper into moist earth, which is the bed in which the food of both is lodged; consequently in figure this is exactly the instrument which these birds wanted. They did not want strength in their bills, which would have been inconsistent with the slender form of their necks, as well as unnecessary for the kind of aliment upon which they subsist; it was only length to reach the object that was wanted by them in this extension of their mandibles." Sir Charles Bell, on the same interesting subject, has something to the following purport:—"If we look to the bill of a bird, we shall find that it is withal a fly-trap; hence its motions must be rapid, and the velocity is increased by the most obvious means imaginable, that is, by giving motion to both mandibles, instead of to one. When a dog snaps, he throws back his head, and thereby raises the upper jaw at the same time that the lower jaw is dropped; but these are slow and clumsy motions, pertaining to the muscles of the neck as well as of the jaws; and the poor hound makes many attempts before he catches the fly that teases him. But a swallow or fly-catcher makes no second effort, so admirably suited is the apparatus of prehension to the liveliness of the eye, and to the instinct which directs the motions of its prehensile organs. The adaptation of the instrument consists in this, that the muscles which open the lower mandible, by the same effort, open the upper one also. A process of the lower mandible, projecting much behind the centre of motion and the muscle which is attached to it, opens the bill; but, at the same time, the lower mandible presses upon the bone, the *os quadratum*. Now, there is attached to this bone, projecting forwards, with its anterior extremity fixed against the upper mandible, a shaft or process of bone, and this receives the pressure of the *os quadratum* when the muscle acts; so that, being thrust forwards like a bolt, it opens the upper mandible which moves upon the skull. Here, then, is a piece of mechanism as distinct as the lock of a gun, which is for the purpose, as we have said, of giving rapidity to the motions of the bill. Is it nearer the truth to consider this as a new apparatus, suiting the necessities of the creature, or an accidental result of the introduction of a bone, which, in its proper office, has nothing to do with the jaw?" Without doubt, this admirable mechanism is the work of Nature's Grand Mechanist, and thus so readily fulfils its purposed intention.

2024. "*The bill of birds*," says another eminent comparative anatomist, "may be considered, in some degree, as supplying the place of teeth. It consists of a bony fibrous matter, similar to that of the nail, or of proper horns; and is moulded to the shape of the bones which constitute the two mandibles, being formed from a soft vascular substance which covers these bones. In fact, it is evident that the figure and dimensions of the mandibles in birds are as intimately connected with the habits and general character of the bird, as those of the teeth are in quadrupeds. They are of extraordinary hardness in those which first bill and then tear their prey, as in eagles, or in those which have to bruise

hard fruits, as parrots, as well as in those which have to penetrate the bark of trees, as the woodpecker, nuthatch, &c. ; but they are soft in such as obtain their food in mud or water, as in ducks, woodcocks, snipes, &c. Many birds, especially birds of prey and the gallinaeous tribe, have the base of the bill covered with a soft skin, called *cere* (*a*, *fig.* 307.), the use of which, however, is not clearly understood. When the *cere* extends to the eye, it is called *lores*. As the bill of birds is at the same time the organ of prehension and mastication, it has an important influence on their character and habits; *ceteris paribus*, there is greater strength in a short than in a long bill, in a thick and solid than in a thin or flexible one; but the general form produces infinite variety in the application of force. A bill hooked at the end with sharp edges characterises birds of prey, whether those which prey on the smaller birds and quadrupeds, or those which prey on fishes, as the albatross, the petrel, &c. The former have a shorter beak, and proportionately greater strength. A tooth-like process on each side adds greatly to the strength of such a bill; hence the birds which are provided with these processes are considered more noble and courageous than the birds of prey which want them, as will be more fully exemplified hereafter. The shrike, which possesses them, scarcely yields in courage to the larger predacious birds, notwithstanding its small size, and the weakness of its wings and feet. When the hooked bill tapers towards the end, it approximates to the knife-shaped bill, which is peculiar to semi-predacious birds, birds of carrion, crows, pies, &c. The knife-shaped bill indicates a character similar to that of aquatic birds, such as the grebe, gull, &c. The bills of ducks, which are in some degree flattened, the more conical ones of geese and swans, and that of the flamingo, of which the upper mandible crosses the lower, have all transverse laminae ranged along their edges, that, when the bird has seized any thing in the water, give passage to the superfluous fluid: thus all these birds are aquatic. In the goosander, which in other respects partakes very much of the nature of ducks, these laminae become small, conical, tooth-like processes, well adapted for holding fish, of which the goosander destroys great numbers. Wholly different from these are the long, thin, soft bills, peculiar to birds which derive their food from animals contained in mud or stagnant waters, adapted to their several purposes: they are straight and long in the snipe, hooked towards the end in the curlew, and towards the top in the avocette." (Notes to second edition of *Blumenbach*, by Messrs. Lawrence and Coulson, p. 58.) The skull of birds of prey is short and broad, the orbits large and separated by a bony septum, the nasal cavity is large, and the auditory also.

2025. *The spinal column in birds* presents some important variations from that of quadrupeds. The cervical vertebrae (*k*, *fig.* 312.) are remarkable for their number, which varies with the kind from nine to twenty-three, and being articulated by means of cylindrical eminences, they allow of great extent of motion; a few of the upper pieces only bend forwards, while the remainder can move in any direction; but they do it backward with most ease. Were there not great flexibility in the neck, birds could not repose as they usually do. Indeed, it is from the mobility of the head and neck that most of their operations are so effectively performed. The vertebrae of the back (*l*, *fig.* 312.), on the contrary, are most of them ankylosed, or, as it were, soldered together, by which they present a firm support for the blade-bones, which in birds are very large, and, unlike those of quadrupeds, lie nearly parallel to the mesial line of the spine. A little reflection will therefore show, that, without a stiffened backbone, the wings would be liable to suffer dislocation, and that this speciality was intended for this purpose of fixed support is evident, for in such birds as do not fly, as the ostrich and cassowary, the spine is flexible. The number of vertebrae in the tail (*p*, *fig.* 312.), differs; in such as move it forcibly they are numerous, in the rowing and sailing tribes, as will be noticed hereafter. The vertebrae in the *Rapaces* are cervical, usually twelve; dorsal, nine; united lumbar and sacral, eleven or twelve; caudal, eight, sometimes nine; the last large and culiform.

2026. *The ribs of birds* are fewer than those of quadrupeds; it is said they never exceed ten pairs, while small intermediate bones unite the true ribs to the sternum: birds of prey have only seven true ribs, the remainder are directed upwards and backwards.

2027. *The pelvis of birds* (*m*, *n*, *fig.* 312.) presents a solidified mass of lumbar vertebrae connected with two broad ossa innominata, or haunch bones, and the sacrum. The pelvic basin opens ventrally, where the symphysis pubis occurs in quadrupeds: it is, however, closed in the ostrich and the cassowary, by which an additional support is afforded to their legs in running, the size and extraordinary exertions of which require it (*z*, *fig.* 312.).

2028. *The sternum or breast-bone of almost all birds is keeled*, but its ridge is more prominent in some than in others. In birds of prey, and in most of those with great powers of wing, it is particularly so; in them it is deeply concave also, to lodge the very massive and powerful pectoral muscles which act on the wings; and thus it is that in the ostrich and cassowary, who do not fly, there is no christa or keel to the sternum. As an addition to the strength of the sternum of birds of prey, and the same with some others which have vast powers of wing, the sternum is ossified throughout, and also nearly solid, exhibiting only two small openings near its posterior angle."

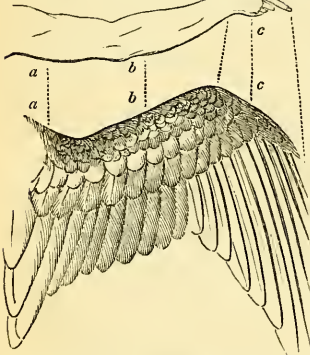
2029. "*The wings*," observes Blumenbach, "are connected to the trunk by means of three

remarkable bones. The clavicles, which are always strong, constitute straight cylindrical bones, the anterior extremities of which are connected to the sternum by means of a bone peculiar to birds, viz. the fork-like bone, or, as it is more commonly termed, the merry-thought (*furcula*, or *os jugale*, in Latin; *la lunette*, or *fourchette*, in French). The ostrich and cassowary have, indeed, no separate furcula; but on either side of the front of the chest is seen an elongated flat bone, consisting of a rudiment of the furcula, with the clavicle and scapula consolidated into one piece." These parts receive a further illustration from Mr. Macartney, thus, — "The point of the fork-like bone is joined to the most prominent part of the keel of the sternum; and the extremities of its two branches are tied to the humeral end of the clavicles and the front of the scapula, just where these bones join each other, and are articulated with the humerus. Hence it serves to keep the wings apart in the rapid motions of flying." "As a general observation it may be stated that the fork is strong and elastic, and its branches wide, arched, and carried forwards upon the body, in proportion as the bird possesses strength and rapidity of flight; and accordingly the struthious birds (ostrich and cassowary), which are incapable of this mode of progression, have the fork very imperfectly formed. The two branches are very short, and never united in the African ostrich, but are anchylosed with the scapula and clavicle; the cassowary, indeed, has merely two little processes from the side of the clavicle, which are the rudiments of the branches of the fork. In the New Holland ostrich there are two very small thin bones, which are attached to the anterior edge of the dorsal end of the clavicles by a ligament; they are directed upwards towards the neck, where they are fastened to each other by ligamentous union, and have no connection whatever with the sternum." In birds of prey the clavicles, like the whole of their osteology, are very strong, and the furcula or merry-thought bears the same masculine stamp. In its branchings it forms a resemblance to the letter V, by which figure it is enabled to offer the resistance of an arch to the great forces applied to it. The furcal-bone (*r*, *fig.* 312.), as is well known, varies greatly in figure in different birds, but it will always be found most arched where the flight is the most powerful and extensive. All its other peculiarities, also, are suited to the particular purposes of the species it belongs to.

2030. *The bones of the wings and legs of birds* are more simply framed than those of man or quadrupeds. A general resemblance to both, however, is apparent. In the wing, the humerus (2, *fig.* 312.), is the longest and strongest bone in the limb, and the lengths of the others diminish in the proportion of their other dimensions, so that thereby, when the wing is moved, the different parts move with velocities proportional to their distances from the centre of action; yet the velocity of the entire is uniform, and the whole under surface of the wing strikes the air with nearly equal force. The wing bones are much varied in different subjects to suit their several purposes, of which the penguin is a striking instance. This bird has two supernumerary bones at the elbow, while that which should correspond with the habits of the bird and the general fin-like form of the organ, plainly shows that it was more intended to act in water than on land. The humerus and cubitus, or first and second wing bones of birds of prey, are elongated and very strong. We have already stated that more analogy exists between the wing of a bird and the arm of a man, than a hasty observer would suppose. Mr. Swainson's scientific elucidation of this matter will bear out our assertion.

2031. "*The joints of the wing*," he observes, "correspond with, and are analogous to, those of man and of quadrupeds; yet they are so singularly modified, that an ordinary observer

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ARM AND WING COMPARED.

between the arm of man and the wing of bird is striking when displayed, although not even suspected until then.

2032. *In the lower extremities of birds*, likewise, variations from a common type are met

would not perceive their mutual relation." In the annexed cut (*fig.* 313.), which represents the outlines of both, *a a* is the humerus or brachium, *b b* the forearm or cubitus, and *c c* the carpus, or hand. This latter, in man and in quadrupeds, is divided into fingers or claws; but in birds, according to M. Cuvier, there is only one small bone representing a finger, with the vestige of two others. If, therefore, the human arm was also an instrument of flight, it would present the appearance of the two fingers, blended together as in the cut. The absence of digits or fingers to the carpus or hand is, however, supplied in birds by the longest and most powerful of all the wing feathers, which bring the wings of both, however differently constructed, nearly to the same shape. (*Cabinet Cyclopædia*, vol. lxxxiii. p. 80.) We cannot pass over any opportunity of noting the *Harmonies of Nature*, which have been so well written on by a well-known author. This resemblance be-

with, corresponding with the habits of the wearers. The femur, or thigh bone, is moderately long and strong in birds of prey, and in them a patella is seen, as well as in the winged grebe and a few others also. In the waders, as the stork, heron, &c. and in the runners, as the ostrich and cassowary, the tibia and the bone common to the tarsus, or, more properly, to the metatarsus, are long, and thus adapted to elevate the one in the water, and to assist the other in running. A slender fibula exists in most, if not in all, birds, although its existence is denied by Blumenbach. It is distinct in the predacious birds, and in some others also; in many, however, it is not distinct, but united by ankylosis with the tibia. The metatarsal bones in most birds of prey are short and strong; in a few only they are slender and not abbreviated: the hinder toe in these birds articulates with a small distinct bone, and has two phalangeal portions; the second toe has three, the third four, and the fourth five; at least such is the case in the specimens that usually come under notice.

SECT. III. *The Brain and Organs of Sense in Birds.*

2033. *The brain of birds* does not appear, at first sight, to materially differ from that of man and quadrupeds; it however, when studiously examined, evidently descends in the scale of structural development. It may be remarked of it, likewise, that although it presents three principal divisions, as in *Mammalia*, the relative situations of these divisions differ somewhat in being placed rather below than behind each other. There is a remarkable discrepancy, likewise, in the relative proportion of brain to the rest of the body in different birds. Carus found it in the eagle at $\frac{1}{160}$, in the siskin at $\frac{1}{337}$, in the pigeon at $\frac{1}{90}$, in the chaffinch $\frac{1}{10}$ of the weight of the body. The spinal marrow or spinal brain of birds presents a minute canal, as in quadrupeds. There is also a similar division of its substance into columns; and the spinal and cerebral nerves are given off in the same manner as in quadrupeds, and present also, as in them, the different nerves of sensation and motion, and the same sympathetic communication between all the important viscera of the body.

SUBJECT. 1. *The Senses of Seeing, Hearing, Tasting, Smelling, and Touch in Birds.*

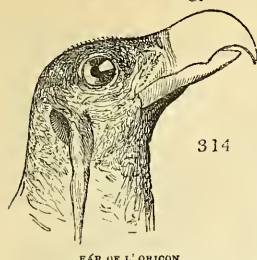
2034. *The importance of eyes to birds* is marked by the circumstance, that whereas among all other animals there are some which are either altogether or partially blind, it is observed that no bird whatever is doomed to grope its way through life in total unconsciousness of light. The value of light to birds is further inferred from the size of the organ receiving it, which is considerable in all, but in the rapacious tribes it is more particularly so. The ball of the eye is sunk in a bony orbit of great size, the sides of which furnish four straight and two oblique muscles to operate its various motions. Posteriorly the globe is hemispherical, anteriorly a bony circle, composed of minute laminae, inserted between the sclerotic coats, contracts its figure to that of a short cylinder, to which the cornea is attached as an interior and smaller hemisphere. This peculiarity of structure is important to the vision of birds; in some the axis or depth of the eye-ball is lengthened or diminished by different portions of the sclerotic coat, by which admirable contrivance the action of the four muscles we have noticed, is rendered more effective in altering the focal angle. Birds, after the manner of the higher orders of mammiferous animals, have three eyelids; but it is to be noted, that their nictating membrane, or third eyelid, extends completely over the globe. Another peculiarity in the eye of birds is the *marsupium*, which is a corrugate membrane covered with a black pigment, which probably absorbs superfluous rays.

2035. *The vision of birds is acute in the extreme*, and exceeds that of quadrupeds almost beyond comparison. What language can express our wonder at the telescopic eye of some birds, which is able to discover a dead carcass when flying a mile perpendicularly above it; and yet such appears to be the fact. The powers of adjustment in their eyes is also a most interesting subject, and is thus remarked on by Mr. Mudie,—"A bird must often strike its prey without any time for adjustment, and therefore the distance from the eye to the bill may be taken as the ordinary short focal length; but call it microscopic, and the magnifying power in line being inversely as the focal length, the lineal dimensions of an object, seen by the long-tailed-tit, will be to that of the same seen by the human eye, as 5 inches to $\frac{1}{10}$ of an inch, or as $12\frac{1}{2}$ to 1. The surface will of course be as the square, or as $156\frac{1}{4}$ to 1; and the body, or solid of an object, as the cube, or $1953\frac{1}{8}$ to 1. Thus an aphid, or any other small insect that can come wholly within the field of vision, will appear very nearly as large to the long-tailed-tit, as two thousand of the same would do to the human eye. The microscopic power of the eyes of those little birds which seek for minute prey on the bark of trees is, therefore, as wonderful as the telescopic range of the eyes of the eagles and other birds which soar aloft, and scan an horizon of miles; and not the least wonderful part of the whole matter, is the ease with which the changes from telescopic to microscopic vision are effected; it is instantaneous, and no less quick than critical. How often have we watched a parent robin feeding its young, alternately moving far and near in search of some animal matter, and in no instance returning without the object espied. The eye of the

eagle, which can discern the motion of a small quadruped at the distance of more than a mile, can shorten its focus so as to be keen and perfect at the distance of a few inches; and the tit, to whose near vision the eggs of flies must appear as large as musket-balls do to us, feels no difficulty at seeing a bush at the distance of more than a hundred yards." For this extraordinary power of vision in birds, some structural specialties were required in their eyes; and our anatomical detail elsewhere has shown that it has been provided for in the osseous but flexible rim or hoop, which bounds the anterior part of the organ. This, by confining the action of the muscles to that part, elongates its axis, and, by so doing, fits it for viewing minute objects, though within a few inches or even lines of its beak. The marsupium on the contrary, it is probable, embraces the lens, and by drawing it backwards, so alters the focus of the organs as to enable it with equal precision to take cognisance of very remote objects also. To assist the comprehension of the doubter on this subject, we would only request him to consider how wondrously his own vision is increased by the magnifying powers of the telescope made by human hands. Can he not, therefore, suppose what may be done by nature's God for the benefit of these his humble children, but no less his children because small and humble. "Not a sparrow," &c. &c. In fact, to use the descriptive words of Mr. Griffith, — "This great extent of the visual power is accompanied with a precision equally great; for the organ being at once both extremely supple and extremely sensible, the eye grows round or flat, is covered or uncovered, contracts or dilates, and speedily and alternately assumes all the forms necessary to adapt itself to every degree of light or distance." Of the latter the following anecdote is an illustration: — "In the year 1778, Mr. Baber, and several other gentlemen, were on a hunting party in the island of Cossimbuzar in Bengal, about fifteen miles north of the city of Murshedabad. They killed a wild hog of uncommon size, and left it on the ground near the tent. An hour after, walking near the spot where it lay, the sky perfectly clear, a dark spot in the air at a great distance attracted their attention; it appeared to increase in size, and move directly towards them: as it advanced, it proved to be a vulture flying in a direct line to the dead hog. In an hour seventy others came in all directions, which induced Mr. Baber to remark, 'this cannot be smell.'" (*Home, Comp. Anat.* vol. iii. p. 216.)

2036. *The sense of hearing is also sufficiently acute in birds*, and the action of the sonorous waves on the nervous expansion within the ears does not apparently differ, in either cause or effect, from what we have already noticed in quadrupeds. The want of external ears in birds is compensated for by an arrangement of feathers, closely folded around the opening of the *meatus auditorius*, which is supposed to assist in catching the sonorous waves. Night birds are observed to have this structural peculiarity very much developed: thus the peculiar expansive circle of feathers, seen in the head of the owl, is supposed to be a kind of external ear, funnel, or trap, for sound. Mr. Mudie, however, regards it more in the light of an assistant to the vision than to the hearing of the owl; for, by producing a convergence of the rays of light, it may, he thinks, assist their crepuscular sight; but such a mass of soft feathers, he justly observes, must prove but very indifferent conductors of sounds. We much admire Dr. Farrar's investigations on the varied placings of the auditory tube of quadrupeds; but we are constrained to doubt whether owls purposely perch aloft, that the ascending sounds from their prey below may reach "the arched, overhanging, and concave external bony structure of the ears." We do not mean to deny the advantage of any structural peculiarity in the ear of the owl; if we had ever doubted it, the dissections of Mr. Macgillivray, and his correct engravings therefrom, must have convinced us: but we have watched these nocturnal prowlers so closely, that we are of opinion, while light remains, they depend on their visual more than their auditive organs for the discovery of their prey; but when light is departed, then the acuteness of hearing takes the place of vision, and the slightest rustle of the field-mouse among the leaves serves for its detection. Neither do they appear to us to watch much for prey when perched, but to actively search for it on the wing, and that principally during twilight and moonlight. From our own observations, we are nevertheless led to allow to nocturnal birds of prey a superiority of quickness in the discrimination of the nature of sounds, and an intensity of power in receiving every sonorous pulse, whether great or small, whether proximate or remote. The owl is a familiar instance of this; one which we tamed used to amuse and interest us and our friends greatly, particularly towards the evening, when he was more on the alert and on the look out for prey than at any other time. A small piece of brown paper crumpled up, and gently moved along the floor by means of a thread, instantly attracted his attention, and occasioned a pounce on the moving fragment. That in doing this his ears were the active agents we proved, by using tinted paper that closely assimilated with the colour of the carpet, the slightest rustle of which immediately arrested his attention; whereas a large moving mass passed unheeded. In the day he was sluggish and but little inclined to prey except the room was darkened, when he was all on the alert immediately. M. De Blainville endeavours to show that the ear of birds presents almost all the structural peculiarities of the human ear, except that the chain of small bones in man is represented by correspondent cartilaginous portions in birds; the incus only of the human ear finding in birds no cor-

responding type. Other continental comparative anatomists have also of late endeavoured to draw a close analogy between the structure of the ear of birds and that of our own. The



absence of an external ear is supposed to be general among birds; but this, like other rules, admits of an exception, though probably a solitary one. Mr. Swainson in his late admirable work on birds has depicted the l'oricon of Vailant, a large species of vulture, native to Southern Africa, which, as will be seen by *fig. 314.*, has a long external ear, that is "not only bare of feathers, but the orifice appears to have a prominent rim, lengthened into a wattle, which hangs down on each side of the neck." He also observes on the ears of birds generally, that, excepting those of the owl, they "exhibit to outward appearance very little variation. M. Cuvier remarks, that nocturnal birds alone have a large external ear, which, nevertheless, is not so prominent as that of quadrupeds."

This statement is so vague as to require some explanation. The ears of a sparrow, or a hawk, are just as external as those of an owl, seeing that in neither of these birds can they be discovered, unless the feathers are carefully removed; whereas, when we speak of an external ear, we annex the idea of its being prominent, like that of the majority of quadrupeds" (p. 47.), or like that of the l'oricon.

2037. *The hearing of birds*, Sir Charles Bell thinks to be very acute. "The slightest noise," he says, "alarms; and the nightingale, or other bird of song, in a summer evening will answer to the note of his rival when he is out of our hearing." We have next to observe the imperfection in the organ — the want of an external ear, which, were it present, would be at variance with all that we have most to admire in the shape of the bird and the direction of the feathers, as conducing to its rapid passage through the air. With this obvious defect of the external ear, can we admit that the internal ear is also imperfect, notwithstanding the very remarkable acuteness of hearing, which we know to result from this internal structure, and from it alone? Now we do, in fact, find a different structure in the ear of birds, but yet nothing is wanting. The columella will be seen to be a shaft of bone of exquisite delicacy, extending from the outer membrane of the ear to the labyrinth, or proper seat of the nerve of hearing; it occupies the place and office of the chain of four bones which belong to the ear of *Mammalia*. We have no authority, however, for affirming that the incus is here wanting more than any other bone of the chain; and if it be said that the os quadratum is the missing incus, why should not we find in the oviparous reptiles, where there is a columella in the ear, an os quadratum in the jaw. "From this mode of inquiry, we find that the sense of hearing is not imperfect, but is adapted to a new construction and a varied apparatus, suited to the condition of the bird; and that there is no accidental dislocation, or substitution of something less perfect than what we find in other classes of animals."

2038. *The sense of taste in birds* is supposed to exist in them in a very limited degree, but whoever will vary their food by the slightest admixture of any noxious matter, will soon be led to doubt the truth of this supposition. The cavity of the mouth, it is true, is more confined in most birds than in quadrupeds; and were it otherwise, it would not necessarily follow that this sense should be dull in them, inasmuch as their fauces are sufficiently extensive; and the critical taster of wines well knows, that when he directs the contents of a full glass to the back of his mouth, it is then only that he receives the full flavour of the liquor. Consequently, although the tongue itself may be horny and stiff anteriorly, its base and the connecting surfaces may be sensitive in the extreme. A more extended view of the physiology of these organs generally, may be gained by a reference to the subject of *Sense of Taste in Quadrupeds*, p. 188.

2039. *The tongue of birds* differs greatly in its composition, its figure, and dimensions, all of which vary as much as the nature of the food and the methods of procuring it. The parrot has a tongue which, though less soft, is yet papillaceous, moistened with saliva, and in figure resembles our own. Can this form at all influence the readiness with which this bird learns to articulate words? We cannot deny but that it may have some influence; yet, admitting the possibility, we must recollect that many other birds are taught to pronounce words, if not with equal, yet with a degree of distinctness which bears no proportion to the dissimilarity between their tongue and our own, or between their tongue and that of the parrot. "In several other birds, on the contrary," as remarked by Blumenbach, "the tongue is horny, stiff, not supplied with nerves, and consequently unfit for an organ of taste. One striking example will supply the place of many. The tongue of the toucan (*Ramphastos*) is sometimes several inches in length, yet scarcely two lines broad at its root. It has the appearance throughout of a piece of whalebone, and its margins are fibrous." What part in the song of birds does the tongue and mandibles take? We do apprehend that the modulation of sound is principally effected in the throat. In the caged bird, the neck is extended, the mouth is actively employed, and the mandibles of the bill by their motions

sufficiently show the part they take; but it is the throat that is seen principally engaged in song. Yet it is no less true than strange, that our closest dissections could detect little variation in the organs of voice between the sexes.

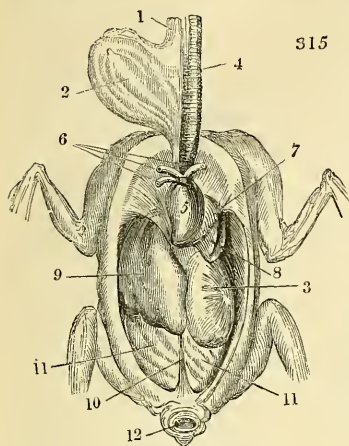
2040. *The tongue of the woodpecker* offers an admirable instance of the adaptation of the form of the parts to the particular purposes of the bird it belongs to; it is also somewhat remarkable that, although it is supposed to have a very long tongue, in reality it has a very short one. In fact, the woodpecker's tongue presents merely a short, sharp, horny, barbed point, but the hyoid, or tongue bone, supplies the deficiency in a very remarkable manner, which is thus described by Blumenbach: — "Behind the barbed point is a very singular *os hyoides*, but having very long *crura*, or branches. This so called bony part consists of five cartilaginous portions: viz. one single piece and two pairs. In the quiescent state of the organ, the former lies in a fleshy and very extensile sheath of the bill; the first pair of cartilages is articulated with this, and they are placed at the sides of the neck. The second pair, commencing from these, run completely over the cranium, under the integuments, and advancing from behind forwards, their converging extremities are placed together in a kind of groove, and commonly terminate anteriorly by an attachment to the right side of the upper jaw. This posterior pair of cartilages may therefore be compared to steel springs, which actuate the whole organ; and it offers an admirable example of the great share which mere elasticity possesses in the performance of some functions of the animal economy. When the tongue is to be darted out, the anterior pieces are drawn together, and enter the sheath of the single portion extended for their reception; the tongue is thus elongated, and admits of being thrust out some inches. This organ in the cock-of-the-wood is still more singular; for there, together with the larynx, it lies deep in the œsophagus, but admits of being quickly elevated and thrust forth by means of muscles acting on it."

2041. *The sense of smell in birds is sufficiently acute.* The external nares, or nostrils, of the several genera open in very different parts of the upper mandible or bill. In the puffin they are seen at the margins, but so small as to be overlooked without care. In the heron the nares are nothing more than narrow fissures without irritability or power of dilating. In birds, in general, the extent of surface of the mucous membrane, known as the pituitary expansion, is not increased by any large accessory cavities as in beasts, but is principally effected by several conchoidal projections, by which, however, the same end is answered — that of extending the surface of the sensitive expansion. The powers of smelling are unquestionably considerable in birds, but nevertheless, a careful comparison of the development of their olfactory organs with those of four-footed animals would convince us, *à priori*, that this sense is less active in birds than in quadrupeds; nor is it unlikely, as a compensating principle, that it is so in the same degree with the superiority which birds possess over brutes in their powers of sight. There are however some who maintain, that it is by scent and not by sight that birds of prey are led to carcasses with such unerring certainty, and in so short a time after death, as they are known to do. Dr. James Johnson is among these, and his reasons for so doing are before the public in *The Medical and Chirurgical Review*. Mr. Audubon, on the contrary, strongly advocates the superiority which the visual organs of birds exhibit over their olfactory powers, in a treatise which appears in the third number of *Jameson's Journal*, entitled *An Account of the Habits of the Turkey Buzzard*. The weight of authority and the convictions gained from direct experiments are, without doubt, greatly in favour of the conclusion, that it is by the superior power of vision that birds of prey are led to carcasses. Were it otherwise, it is argued, they would be seen skimming over the surface of the earth, where the effluvium, so hateful to others but so redolent to them, would more readily present itself. There is, however, yet room to doubt. We certainly do know, that the scenting powers of the *Gralla*, or water birds, which have to grope for their food in water and mud, is great. In these, an enlarged branch of the fifth or olfactory pair of nerves is seen to be particularly developed, purposely to make their beak strongly sensitive to the presence of the edibles these birds seek: such is nature's foresight, and such are the charms that accrue from studying her works; and we may ask, Whose opportunities to do this are greater than the sportsman's?

2042. *The sense of touch in birds is more acute than very extensively diffused.* The bill is their principal organ of voluntary feeling, and in broad billed birds, as ducks, &c. the skin of the mandibles is thin, and very sensible, from the plentiful supply of nerves: neither is it the horny hardness of a part which should make us conclude it incapable of receiving sensitive impressions. Both the bill and tongue of the parrot are hard and horny; the former is so in the extreme, yet no one who has witnessed the delight with which a parrot exercises his bill in wantonly destroying articles of furniture, can doubt but that his sense of touch is gratified through the medium of his bill. Again, we knew a parrot which was very fond of an individual in a family, and his method of showing this fondness was by rubbing the nares of his beak against the eyes of the favourite, and equally so by attempting to insinuate his tongue within the eyelids themselves of this object of his attachment, which he did with a tenderness and dexterity truly surprising. The feet of birds, also, are more or less organs of touch, and particularly in such as make use of them to carry food to their mouths, as the whole of the parrot tribe are known to do.

SECT. IV. *The Thoracic and Abdominal Viscera of Birds.*

2043. *The thoracic and abdominal cavities of a granivorous bird displayed (fig. 315.):—* 1, the œsophagus; 2, the crop; 3, the gizzard; 4, the trachea, or windpipe; 5, the heart; 6, the three branches of the aorta; 7, the pericardium, or heart bag; 8, the left; 9, the right lobe of the liver; 10, a suspensory ligament, by means of which the air-cells belonging to the stomach are separated from those which belong to the right lobe of the liver; 11, 11, the intestines inclosed within a peculiar sac or envelope; 12, the orifice of the cloaca, or vent. Such being the disposition of the abdominal viscera of birds generally, it may be well to notice the principal variations which occur between the carnivorous and granivorous tribes. The crop in the latter (2) is so large as to admit sufficient grain for a meal; whereas in the former, the whole tube belonging to it is capable of great expansion. The gizzard (3) in the granivorous, or grain-eating birds, is a strong well defined mass, buried in the left side below the liver, where the grain, first softened in the crop, passes on, to be further acted on both by trituration and solution. The intestines of these birds are also seen to be longer than the same organs in the carnivorous and piscivorous birds, that the assimilation of nutriment might be more perfect.

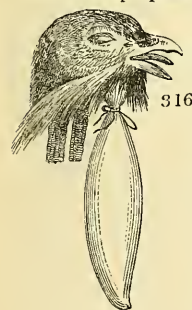


INTERNAL VIEW OF BIRD.

The liver in most birds is rather large, but in domesticated fowls it enlarges greatly, as seen (8, 9). The pancreas is usually of considerable size, and the spleen small. See further elucidations below.

SUBSECT. 1. *The Collection and Digestion of Food in Birds.*

2044. *Birds collect food both with their feet and bill,* but by far the greater number use the latter for the purpose. The mouth is variously shaped in them, and of very unequal magnitudes, being in some, as the insectivorous, very small, while in others, as the toucan, it is monstrous. Some birds, like monkeys among mammiferous animals, have additional receptacles, or faucial cavities, besides the common cavity of the mouth. The male bustard furnishes



BUSTARD.

an instance, whose throat-sac extends under the integuments of the neck, and opens by a wide aperture under the tongue (fig. 316.). The pelican presents likewise a very considerable dilatation of the fauces, which is capable of holding several quarts of water, by which this inhabitant of the wilderness, like the camel of the desert, carries with him his supply of fluid nourishment. In the *Carnivora* among birds, the capability of distension in the œsophagus is as remarkable as among dogs, wolves, foxes, &c. By this structural peculiarity they are enabled to take in vast masses of matter, which are in fact only partially swallowed. Many seafowl, and the heron, as a land bird, can retain a fish partly within the stomach and partly within the œsophagus; and as the digestion dissolves the stomachic portion, the remainder passes onwards to be digested in its turn. It is thus that the great works of waste and supply are kept in action throughout all animated nature.

2045. *The œsophagus, or gullet of birds,* before it reaches the sternum or breast-bone, forms an expansion known as the crop, from which it is continued on to the true digesting stomach: thus the crop forms a sort of pocket, protruding itself out of the line of the œsophageal orifices (2, fig. 315.). In this pouch the food is softened by maceration: it is more particularly thus acted on in all the gallinaceous birds. It is situated in front of the sternal bones, by which it can admit of much distension without inconvenience, not being lodged within the bony case. It is to the presence of an accessory appendage to the œsophageal canal that the pouting horseman pigeon swells himself out so majestically. It is to be remembered, however, that a crop is not present in all birds. In water-fowl and a few land birds it is wanting. In hawks there is a crop, but in them it is rather a simple dilatation of the gullet than a distinct pouch. It is this which, in the language of falconry, is called the gorge.

2046. *The digesting stomach* is either a very powerful muscular mass with a hard cuticular lining, which adapts it to the grinding of grain, as in the *Gallinæ*, or it is thin and membranous, as in carnivorous birds. The united processes of trituration and digestion, as they occur in gallinaceous fowls, is worthy of some further notice. Grain received into the crop

of birds, by reason of their want of teeth, must necessarily require some forcible operations to break it down. It is first slightly softened by a mucous secretion, which is in lieu of the insalivation of beasts. From hence it is soon passed into the gizzard (3, *fig.* 315.), where it is triturated by means of hard substances, as stones, &c. which have been instinctively swallowed for that purpose. These stones are set in motion by four muscular masses, one large hemispherical pair of which must be familiar to every one who has examined a gizzard. A small pair attached to the extremity of the gizzard makes up the muscular apparatus, and the whole pouch is lined within by a very dense cuticle. The experiments of Spallanzani, by means of bullets stuck around with needles, &c. which were invariably broken down, are probably present to the reader's recollection, by which he will understand how this animal mill, with its grindstones, can soften into a pulaceous mass the hardest grain, and having so done, how the absorbent system, yet to be noticed, can suck up the nutritive chyle for the support of the body.

2047. "*The liver of birds* is larger in size," says Dr. Fleming, "and more uniform in shape, than in quadrupeds. Its two lobes are nearly of equal size (8, 9, *fig.* 315.). The gall bladder is absent in a few birds. The hepatic and cystic ducts unite in some species, and in others open separately into the intestine. The pancreas is situate between the folds of the duodenum, in the form of a long narrow conglomerated gland; its ducts are seldom united with the biliary ones. The spleen is small, and situate between the left lobe of the liver and the stomach, in the immediate neighbourhood of the gastric zone. The kidneys form a row of irregular lobes on each side of the lumbar vertebræ, and fill up cavities in the haunch bones. A ureter proceeds from each, and terminates in the cloaca. The urine has a white chalky appearance, and even in those species which subsist entirely on vegetable matter it abounds in uric acid." (*Phil. of Zool.* vol. ii. p. 226.)

2048. "*The intestinal canal* is much shorter in birds than in beasts; it is also generally shorter in carnivorous birds than in such as derive their food from the vegetable kingdom. In birds there is scarcely any perceptible difference between the large and small intestines. Most birds have two cæca; some, however, have only one; and a few of the predacious kinds want it altogether. The rectum ends in the cloaca, which is an expanded portion, containing the termination of the ureters, the genital organs, and the *bursa Fabricii*." (*London Encyclopedia*, art. ANATOMY, p. 253.)

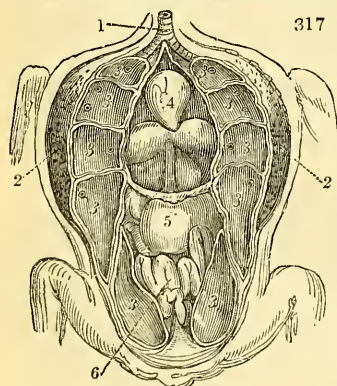
SUBJECT. 2. *The Circulation and Aëration of the Blood in Birds.*

2049. "*The circulating system of birds*," says Home, "is chiefly distinguished from that of quadrupeds by the structure of the heart. The pulmonic ventricle, instead of having a membranous valve (such as is found in both ventricles of quadrupeds, and also in the systemic ventricle of birds), is provided with a strong, tense, and nearly triangular muscle, which Blumenbach considers as assisting in driving the blood with greater force into the lungs."

2050. *The aëration of the blood in birds* is conducted in the same manner as in quadrupeds, to which subject we would refer; it is however probable, that the blood of birds is more highly oxygenated than that of most other animals, from the extensive diffusion of air throughout the whole of their cellular structure, which, so far from being confined to the lungs, pervades even the bones and viscera, and thus becomes a means of furnishing them with a more abundant supply of strength and energy than is given to animals without this speciality of structure.

SUBJECT. 3. *The Respiratory Functions of Birds.*

2051. *Our cut* (*fig.* 317.) represents a bird of rather considerable dimensions cut open, and having its breast-bone removed, so as to exhibit the inner surfaces of the chest and belly,



RESPIRATORY ORGANS.

by which the pneumatic apparatus, which yields strength and buoyancy to the frame, is brought into view:—1, the trachea; 2, the lungs; 3, the air-cells, the openings seen near each figure are the tubular orifices by which the air from the lungs is brought into these sacs, and thence carried over the frame universally; 4, the heart; 5, the stomach; 6, the intestines. The whole body of a bird may therefore be said to be blown up, as it were, by air; the consideration of which serves to account for many remarkable circumstances we observe in the feathered races, not commonly met with in most other animals. Their specific gravity, were it not lessened by structural specialties, would bind them down to the earth, instead of elevating them almost to the skies. These specialties hinted at, principally consist in a pneumatic apparatus, which our cut shows to be advantageously situated in advance of the other viscera. The quantity of blood here circulating is very considerable, and it being essentially necessary that its quantity also by aëration should be equally great, so the properties of extreme buoyancy and vast powers of action are the results. The muscular apparatus

of the heart enables it to propel the blood, both speedily and powerfully, from the right side of the heart into the lungs; which, although they are not very massive, yet the cavities connected with them in birds being most extensively spread over the body generally, a great propelling power is gained by muscular pressure. The lungs themselves in birds are two spongy masses, firmly adherent to the intercostal space in the posterior part of the chest, as seen at 2, 2, *fig.* 317. In addition to these, however, there are considerable sacs or cavities, to the number of eight or ten, according to the variety of the bird. By means of tubular orifices the air is from thence distributed over and among the different viscera of the body, throughout the bones also; in fact it permeates every part of the frame. We repeat that the parts we have just pointed out are not those alone which are rendered strong and buoyant by the agency of the atmospheric air, but also that similar air-cells may be traced universally spread over every part, and within the most minute interstices; each part is filled with air, the lightness of which gives buoyancy to the mass, as its purity affords it strength. With that admirable design so apparent in the works of nature, the quantity of air contained in the mass of the body in every bird is not the same; neither is every part equally furnished in different kinds of birds; but the quantity in each is found to be proportioned to the influence exerted on the locomotion of the body of the bird, and in each to its kind; and also that the separate portions are more or less permeable, according as its flight is confined or extensive. Thus in the *eagle*, and other birds of strong flight, the bones which support the wings are filled with air throughout; while in such as the *puffin*, &c. &c. where the wings are unequal to any lengthened flight, or in the *ostrich*, which prefers to run, air-cells are found in greater numbers within the bones of the leg and thigh.

SUBJECT. 4. *The Vocal Organs of Birds.*

2052. *We have heard some sportsmen* laugh at the enthusiasm that has been expressed at the midnight juggling of the nightingale, the midday warbling of the lark on high, or the far heard song of the thrush in the evening. These persons, we presume, esteem the feathered race little further than as they offer a mark for their gun, or a dish for their table. Occasionally, however, even these insensibles, in common with their spaniels and pointers, open their ears and evince their pleasure at the well known call of the partridge, or the crowing of the pheasant. Seriously, we owe more to the voice of birds than the mere delight of their song, exquisite as it is. How useful is the note of the *Cuculus Indicator*, or honey-bird, to the African, in leading him to the honey store of the bees? Or how important is that of the Asiatic bird, which hovers and screams over the lair of the crouching tiger, to warn the traveller from his impending doom. The solid benefits we receive from the voice of birds might be multiplied beyond our limits of telling them; we would, therefore, next direct the attention to the great power of the vocal organs of the feathered race, which greatly exceed those of most other animals, comparing the bulk of the one with those of the other. The scream of the jay may be heard as far as the lowing of the ox; the evening song of the thrush, perched on high, may be distinguished a mile off; and we have ourselves heard a colony of rooks cawing out their vespers, ere they settled themselves for the night, more than two miles off.

2053. *The apparatus*, which is chiefly concerned in forming the voice of birds, is found in the inferior or bronchial larynx. Hence the division of the trachea below the upper rima glottidis scarcely produces any change in the voice of several birds, as they still utter sounds by means of the bronchial larynx. This larynx contains a second rima glottidis, formed by tense membranes, which may be compared in several cases, particularly among the aquatic birds, to the reed pipes of an organ. It is furnished externally with certain pairs of muscles, varying in number in the different orders and genera, and with a kind of thyroid gland also. The course and proportionate length of the trachea, and particularly the structure of the inferior larynx, vary very considerably in the different species, and even in the two sexes. (*Coulson's Blumenbach*, p. 198.)

2054. *The vocal organs of birds* will bear a close comparison with wind musical instruments. It has been observed, that the sound produced by some of the larger birds is exactly similar to the notes that proceed from a clarionet, or hautboy, in the hands of an untaught musician. The inferior glottis exactly corresponds to the reed, and produces the tone, or simple sound. The superior larynx gives it utterance, as the holes of the instrument; but the strength and body of the note depend upon the extent and capacity of the trachea, and the hardness and elasticity of its parts. The convolution and bony cells of the windpipe, therefore, may be compared with the turns of a French horn and the divisions of a bassoon; and they produce the proper effects of these parts in the voices of those birds in which they are found.

SUBJECT. 5. *The Absorbent or Nutrient System in Birds.*

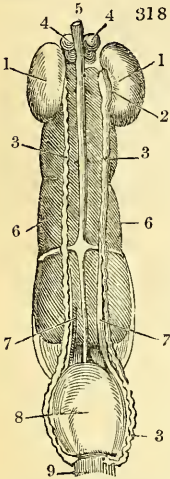
2055. *The chyle in birds* is transparent, consequently their absorbing vessels are less easily demonstrated than those of quadrupeds; but they may be injected with care in the usual manner. The mesentery has no gland, although lymphatic glands are not wanting in other

parts. It is probable that the rapidity that is required in the supply of nutriment in this class is the reason of this ready transmission; and it may be, for the same reason, that the thoracic duct is double. Lymphatics in birds have, however, been altogether denied; but careful investigation has satisfactorily detected them. What has been stated on the physiology of this system in quadrupeds equally applies here, consequently we shall avoid any further repetition of the subject.

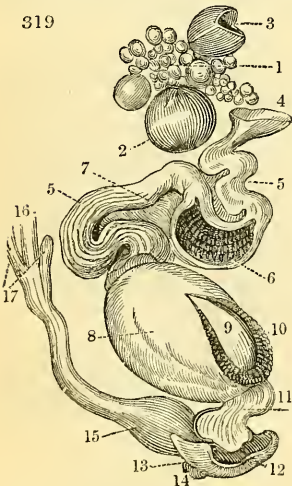
SECT. V. *The Generative System in Birds.*

2056. *The male organs* concerned in this system are simple in their structure. The testes (1, 1, *fig. 318.*) are seen placed near the kidneys. During the winter season they are so small that in some birds they might be overlooked by a common observer; but no sooner does the vernal season approach, than in obedience to the call of nature, "to be fruitful and multiply," they enlarge greatly, the epididymis (2, 2) following the same example. A spermatic duct is sent off from each (3, 3), and opens into the cloaca (4). The remaining organs of this vicinity are the renal capsules (5, 5), the aorta (6), the kidneys (7, 7), the ureters (8), the rectum (9). In birds the testes and kidneys are found near together; and it is worthy of note, that the ductus deferentes are the only ostensible male generative organs always present in the feathered races. In some, as the male among barn-door fowls, these canals present a dilatation which has been considered as a type of the vesiculæ seminales of other animals. A true penis is wanting in most birds, a few only having one of considerable size, of which the common drake is an instance. Indeed, the whole system of the generative male organs are simple, and more particularly so when compared with the female organs in the figure below. They however, as we have just observed, become more fully developed as the season of pairing advances. All the energies of the frame are now increased; the male is pugnacious in the extreme: the comb and wattles of the cock or barn-door fowls swell and are tinged with red blood; his jealousy becomes extreme, and his battles with a rival fierce and bloody. The female also submits to nature's grand purpose of perpetuating her creatures, and fulfilling nature's instincts to continue the race. We would ask, are there many sights more interesting than the watchful care of the barn-door hen over her tiny brood? How eagerly she searches for every grain, and how dexterously she breaks each into minute morsels for the minikins.

2057. *The female generative organs.* The ovary (1, *fig. 319.*) is usually single, and the ova are inclosed in the yolk bags, which are seen in the figure supported on short foot stalks. A tolerably mature egg is seen at 2 in its capsule; the white line (3) indicates where the capsule opens to permit the escape of the egg. The oviduct is an important part in the female generative organs, and its various portions occupy the figures, 5, 6, 7, 8, 9, 10, 11. It pursues a tortuous course from its orifice (4) to its insertion into the cloaca, and enlarges as it proceeds backwards for the reception of the mature egg. Its anterior convolutions are internally lined by a secreting villous surface opened at 7, to show its folds. The papillæ, seen on this inner surface, are the orifices of glands, which secrete the glair or white of the egg. The part which immediately succeeds to this (8, 9, 10), is known as the uterus; 11 marks the vagina, which is here laid open to show the longitudinal folds on its inner surface; it finally inserts itself into the cloaca (12), an empty capsule from which the egg (9), now lodged in the oviduct, has escaped. The orifice of the oviduct is seen at 4; its convolutions at 6; an opening to show its membranous foldings within at 7; the dilated portion of the oviduct at 8, which has been cut open to show the matured egg (9). It is here that by the secreting powers of the glands of the duct the egg receives its shelly coat. The villous surface of the shell-secreting portion is seen at 10; 12, the cloaca; 13, its parietes, or walls; 14, the bursa Fabricii; 15, the dilatation of the rectum; 16, the intestine. These illustrations of the male and female generative organs are principally derived from Mr. Gore's translation of the valuable work



MALE GENERATIVE ORGANS.



FEMALE GENERATIVE ORGANS.

of Dr. Carus on *Comparative Anatomy*, to which we would strongly recommend the inquirer into this or other subjects of comparative anatomy to apply.

2058. *The component parts of the eggs of birds* are, first, a friable cortex or egg-shell, under which a thin but firm membrane lines every part of the shell, and covers all the contents, excepting only a very small part at the obtuse end. The cavity thus formed contains a small portion of air, but which is observed to increase if the egg be kept long. The egg-shells of birds contain more lime and less gelatinous matter than those of reptiles. The investing membrane incloses the albumen or white, or rather whites, for there are two, one dense and viscous adjoining the yolk, and another thin and liquid which surrounds the more dense portion which incloses the yolk. The yolk itself has also its appropriate bag, from each end of which a whitish substance is seen to ramify within the albumen, and in all probability these ramifications are absorbents by which the changes that take place during incubation are effected. The small round white spot, vulgarly called the *tread* of the cock, but known by anatomists and naturalists as the *macula* or *cicatrix*, is not yet understood.

2059. *The reproductive process* is unquestionably the most important that takes place in the animal frame, and in none are its effects more apparent than in birds. As already observed, at stated periods, vast changes take place, which show the excitement that is approaching in both sexes, though more outwardly apparent in the male than the female. The plumage takes on its most vivid tints; the muscles swell and harden; the air of the male becomes martial in the extreme. The polygamous birds watch over their seraglio with a jealous eye, and woe to the intruder that appears within the accustomed beat. Every sportsman knows how pugnacious are pheasants, partridges, and quails, at these seasons. The monogamous birds, on the contrary, each being contented with his single mate, assists her in constructing a nest for depositing her eggs, supports her during her sitting, and crows, cockets, or sings within her sight and hearing, to relieve the tedium.

2060. *Of the nidification and incubation of birds* much interesting matter has been laid before the public by numerous writers, one particularly may be referred to as at once interesting and instructive. We allude to the *Architecture of Birds*, in the *Library of Entertaining Knowledge*, which we recommend to the notice of the inquirer, contenting ourselves with remarking, that the same variation which marks the persons and manners of birds in the breeding season, extends itself also to their choice of localities for nidification; from the simply dropping their eggs on the naked sand, as is done by the ostrich and cassowary, and then leaving the hatching process to the warmth of the sun, to those more care-taking tribes that dig a kind of burrow in the earth for the purpose, or to those that, like the falcon, seek for a cleft in the massive sides of the rock, where, on a few sticks, the whole process of rearing a family, usually not a numerous one, is begun and finished. The gallinaceous birds, and other birds unaccustomed to perch, also make a simple nest on the ground. Many of the smaller birds, on the contrary, construct nests with much pains, and with great complexity of structure, each kind of bird, by some mysterious law, adhering almost invariably to one type.

2061. *The eggs of birds are as varied as their species*, and many who see these pages will remember with pleasure the marauding schemes of younger days, and the pendent festoons of egg-shells which resulted from these plunderings. Although, as we have observed, the colours and markings of eggs are various, their general characters are somewhat grouped: thus the eggs of the *Gallinacea* are mostly white; some, however, are slightly tinged with yellow, green, &c. White is also the predominant ground-colour in the eggs of the birds of prey, but most are spotted with some red; when the ground has a reddish tinge, the spots are usually brown. The eggs of some owls are wholly white, as those of the wood-owl and screech-owl. Birds which nestle in high trees, as ravens, crows, and pies, usually lay eggs with a greenish ground bespotted with brown. The white eggs of swimming birds are said to be most of them of a rounded form, while those of the waders are more generally elongated. The number of eggs laid is always in strict unison with the means of supplying the future progeny with food: thus birds of the larger kinds seldom lay more than two eggs; the smaller lay from four to six, and occasionally more.

2062. *The formation of the egg* is wholly dependent on the hen, for hen birds in solitude often lay eggs. In the summer of 1835 we saw one dropped by a falcon, which had been in a state of close confinement for some years. The *vitality* of the egg is derived from the female, for a sound egg laid without any communication with a male bird cannot be frozen by the same diminution of temperature that would act on a rotten egg. It requires however the presence of the male, and the personal co-operation of both sexes, while it is in the body, to *impregnate* it. It is also a curious physiological fact, that one sexual union only is sufficient to impregnate all the eggs that would be laid during the whole season; consequently, the germ of all the eggs must have been already formed. It is a striking proof of the wisdom of nature's designs in the appropriation of functions, harmonising with her intentions towards the convenience and preservation of her creatures, that, according as the young of any brood are more or less capable of collecting their own food after hatching, their original nest is seen to be more or less artificially constructed.

SUBJECT. 1. *Incubation of the Egg, and Evolution of the young Bird.*

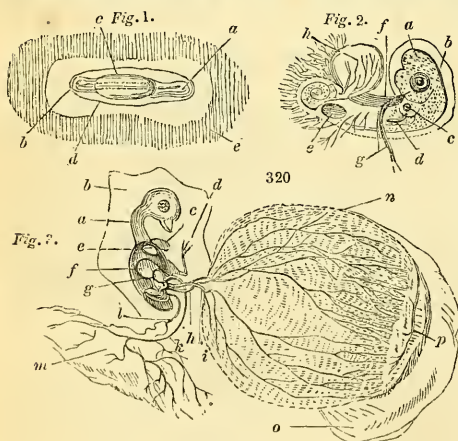
2063. *The following appearances of the incubated egg of the common hen are partly derived from our own observations, but mainly from those of Blumenbach.* We have also borrowed from the plates accompanying Mr. Gore's *Translation of Cuvier*, three illustrative cuts (*fig. 320.*), which we hope will further elucidate the subject. The various vital processes of nutrition and formation which are carried on in the fœtus of the *Mammalia*, while in its mother's body, by means of the most intimate connection with the parent, are effected in the incubated chick by its own powers, quite independently of the mother, and without any extraneous assistance, except that of the atmospheric air and a certain degree of warmth.

2064. *When an impregnated egg has received so much continued heat as to excite the germ to action, a small shining spot of an elongated form, with rounded extremities, but narrowest in the middle, is perceived at the end of the first day, not in nor upon the cicatricula, but very near that part on the yolk-bag.* This may be said to appear beforehand, as the abode of the chick which is to follow. No trace of the latter can be discerned before the beginning of the second day. It now resembles a gelatinous filament with large extremities, very closely surrounded by the amnion, which at first can scarcely be distinguished from it. A minute examination has detected the areola pellucida with the following appearances after forty-four hours' incubation. The parts magnified to render them more distinct, are thus depicted in *fig. 1.* of our cut: — The cephalic extremity of the embryo (*a, fig. 1.*), the caudal extremity with the rhomboidal sinus of the spinal marrow (*b*), the open abdomen at the bottom of which the spine may be seen (*c*), the areola pellucida (*d*), the membrane of the yolk (*e*).

2065. *The first appearance of red blood is discerned on the surface of the yolk-bag towards the end of the second day.* A series of points is observed, which form grooves; and these closing, constitute vessels, the trunks of which become connected to the chick. The vascular surface itself is called *figura venosa*, or *area vasculosa*; and the vessel by which its margin is defined, *vena terminalis*. The trunk of all the veins joins the *vena porta*, while the arteries which ramify on the yolk-bag arise from the mesenteric artery of the chick.

2066. *On the commencement of the third day the germ of a heart may be discerned by means of its pulsation.* Other parts of the incubated chicken are destined to undergo successive alterations in their form, but the alteration is observable in the heart in particular. In its first formation the heart merely resembles a tortuous canal, consisting of three dilatations lying close together, and arranged in a triangle. One of these, which is properly the right, is then the common auricle; the other is the common ventricle, afterwards the left; and the third becomes the dilated part of the aorta. About the same time the spine, which was originally straight, becomes incurvated; and the distinction of the vertebrae is very plain. The eyes may be distinguished by their black pigment, and comparatively immense size; and they are afterwards remarkable, in consequence of a peculiar slit in the lower part of the iris. A descriptive delineation of our interesting subject, borrowed

from Mr. Gore, presents the changes of the embryo to the perfect chick, and contains three separate figures, 1, 2, and 3. *Fig. 1.* represents the areola pellucida of a hen's egg, after being sat upon forty hours; *a*, the cephalic extremity of the embryo; *b*, the caudal or tail extremity, exhibiting the sinus, containing the spinal marrow; *c*, the abdomen, with the spine at its termination; *d*, the areola pellucida; *e*, the membrane which contains the yolk. After seventy-two hours' incubation, as seen in *fig. 2.* of the combined cut, the progress of the chick is thus exemplified: *a*, the embryo; *b*, the amnion; *c*, the heart; *d*, rudiment of the wing; *e*, the hind extremities; *f*, the abdomen, into which the membrane of the yolk (*g*), is reflected; *h*, the allantois, called by some, but Mr. Gore observes improperly, the chorion, is here seen



VIVIFICATION OF THE EGG.

projecting. About the fourth day the chick exhibits its most important viscera, as the stomach, intestines, liver, &c.; the gall-bladder is not visible until the sixth day; a vascular membrane (*chorion*, or *membrana umbilicalis*), begins to form about the navel, and increases in the following days with such rapidity, according to Blumenbach, that it covers nearly the whole inner surface of the shell within the *membrana albuminis*, during

the latter half of incubation. This seems to supply the place of the lungs, and to carry on the respiratory process instead of those organs. The lungs themselves begin, indeed, to be formed on the fifth day; but, as in the fœtus of the *Mammalia*, they must be quite incapable of performing their functions while the chick is contained in the amnion."

2067. "*Voluntary motion*," according to the same authority, "is first observed on the sixth day, when the chick is about seven lines in length. Ossification commences on the ninth day, when the ossific juice is first secreted, and hardened into bony points. These form the rudiments of the bony ring of the sclerotica, which resembles at that time a circular row of the most delicate pearls; at the same period the marks of the elegant yellow vessels on the yolk-bag begin to be visible. On the fourteenth day the feathers appear; and the animal is now able to open its mouth for air, if taken out of the egg. On the nineteenth day it is able to utter sounds; and, on the twenty-first, to break through its prison, and commence a second life. The chorion, that most simple, yet most perfect, temporary substitute for the lungs, if examined in the latter half of incubation in an egg very cautiously opened, presents, without any artificial injection, one of the most splendid spectacles that occurs in the whole organic creation. It exhibits a surface covered with numberless ramifications of venous and arterial vessels. The latter are of a bright scarlet colour, as they are carrying oxygenated blood to the chick: the veins, on the contrary, are of the deep or livid red, and bring the carbonated blood from the body of the animal. Their trunks are connected with the iliac vessels; and, on account of the thinness of their coats, they afford the best microscopical object for demonstrating the circulation in a warm blooded animal. Another curious membrane, the *membrana vitelli*, is also connected to the body of the chick, but by a twofold union, and in a very different manner from the former. It is joined to the small intestine by means of the *ductus vitello-intestinalis*, and also by the blood-vessels which have been already mentioned, with the mesenteric artery and vena portæ."

2068. *The representation of the parts in a hen's egg at the end of the thirteenth day's incubation*, is seen in *fig. 3.* of our combined *fig. 310.*: — The fœtus (*a*), the amnion laid open (*b*), the rudiment of the left wing (*c*), the rudiment of the left leg (*d*), the heart (*e*), the liver (*f*), the stomach (*g*); *h* portrays an intestinal loop without the abdomen, which is connected to the yolk-bag by a ligamentous union; the *ductus vitello-intestinalis* (*i*), the umbilical vein (*k*), the umbilical artery (*l*), the allantois or chorion of Blumenbach (*m*), the yolk-bag, on which the omphalo mesenteric vessels ramify, and from the so-called *figura venosa*, which here occupies nearly the whole of the egg (*n*), the vena terminalis (*o*), the situation where the amnion is connected with the yolk-bag (*p*), the albumen (*q*).

2069. *During the course of incubation* the yolk becomes constantly thinner and paler by the admixtures of the inner white. At the same time, innumerable fringe-like vessels with flocculent extremities, of a most singular and unexampled structure, form on the inner surface of the yolk-bag, opposite to the yellow ramified marks above mentioned, and hang within the yolk. There can be no doubt that they perform the office of absorbing the yolk, and conveying it into the veins of the yolk-bag; where it is assimilated to the blood, and applied to the nutrition of the chick. Thus in the chicken, which has just quitted the egg, there is only the remainder of the yolk and its bag to be discovered in the abdomen. These are completely removed in the following weeks, so that the only remaining trace is a kind of cicatrix on the surface of the intestine. (See translation of *Blumenbach's Comparative Anatomy*, 2d ed. p. 374., and *Gore's Illustrations of Carus's Comparative Anatomy*; both of which works we would recommend to the reader's notice, if fortunately our cursory observations should incline him to enter more deeply into the interesting subjects of natural history and comparative anatomy.)

SECT. VI. *The muscular Structure of Birds, and the Actions produced thereby.*

2070. *The muscles of birds* are composed of fibres, red in colour, and dense in structure. Their tendons are equally well marked, and of such extreme firmness and tenacity, that they ossify by age, as may be particularly observed in the legs of all gallinaceous birds, and indeed in all those that use their lower limbs more than their wings, as the *Grallæ* or waders. A sportsman reading this will probably recall the unpleasant sawing, pulling, and grinding, which his knife, his fingers, and his masticators, have been all of them engaged in, when attempting the separation of the several parts of the hind-quarter of a partridge, or the leg of a pheasant of the most ancient order. Turkeys are not usually spared so long; but should such perchance fall in his way, he may console himself by separating these tendinous striæ, and reserving them for bird-calls; and we can assure him that he cannot find better. We have ourselves also used them at a pinch, instead of gimp, in jack-trolling with success. The cervical or neck muscles of birds are long, numerous, and distinct; by which the infinitely varied motions of their head are performed.

2071. *The pectoral muscles* are those large fleshy masses which are so familiar to us, on the sternum or breast-bone of a fowl, and from their size we may form some opinion of

the power with which they must act on the wings, inserting themselves, as they do, in the most favourable manner, into each. This fleshy mass of pectoral muscle is divided into three parts, or three pectoral muscles,—by which we mean that there are three pairs to each side; for the motive muscles throughout the body, as well of birds as of quadrupeds, are mostly in pairs. The first pectoral muscle is by far the largest, and in fact it weighs more than all the other muscles of the body together, affording a proof of the power required to sustain flight in a bird. It takes its origin from the sternum, or breast-bone, from the furcula, or fork-bone, and from the ribs also; thus originating, and thus powerfully connected, it is inserted or fixed by its tendon in a rough projecting line of the humerus, or first wing-bone. By depressing this important bone, it becomes evident to the most partial observer, that it acts most powerfully on the flight of a bird, inasmuch as it enables the wing to apply its concave surface forcibly against the resisting atmosphere.

2072. *The intermediate pectoral muscle* lies directly under this, but takes its origin principally from the sternum. Its tendon passing over the articulations of the furcula, with the clavicle and scapula, enters a pulley, and also inserts itself into the humerus. This muscle is, however, an antagonist to the former by elevating the wing, which bespeaks a very curious contrivance, for though its office is to elevate the limb, it is itself placed below it, the reason for which apparent anomaly a little consideration will explain, for, from no other surface could it so conveniently originate, or secure so extensive an attachment as it is enabled to do, nor by any other contrivance could it act so efficiently. The lesser pectoral muscle originates from the clavicle and a part of the sternum, and is seen to pass from these origins to insert itself into the humerus, in such a manner as to depress the wing in conjunction with the first pectoral muscle.

2073. *Of the muscles of the trunk* we may first remark, that in these birds the diaphragm, or muscular partition which divides the cavities of the chest and belly of beasts, is wanting. Of the muscles of the abdomen and ribs there is little to remark; those of the caudal vertebræ are very distinct, and are divisible into levators, depressors, and laterals; which last are numerous and complex. The muscles of the lower extremities are very similar to those of the higher order of quadrupeds; we shall therefore not dwell further on them here, but refer what may be necessary to say of them to the actions which are operated by their agency.

2074. *The variable actions of birds* convince us that they have locomotive capabilities of a higher order even than belong to beasts. These motions also, when well considered, appear the effect of structural peculiarities common to them only. The subject cannot but be considered as a very interesting one, and we offer it to the notice of the sportsman as one, the practical observations of which may beguile many leisure moments when his sporting intents are frustrated. It is only of late that Natural History has unfolded her charms to the many; for, rendered apparently difficult of access by its systematic dress, and obscured by technicalities, it had attractions only for the few. This period is happily now passed, and the subject we advocate presents itself to us of the present day easy of attainment, and inexhaustible in the interest it excites. We indulge in a conviction, which has increased with our sporting practisings, that the full enjoyment of field sports, and the study of zoology, are in their natures inseparable; and we have little doubt but that, in a few years, every respectable sportsman will be also somewhat of a naturalist; and that many, by the very nature of their pursuits, will become first-rate ones.

SUBJECT. 1. *The Action of Flying.*

2075. *Flying is one of the most curious among all animal motions.* Leaping carries a body into the air, but the propulsive force having ceased, gravitation resumes its sway, and the animal descends. In flying, gravitation is completely overcome; the body not only remains suspended at pleasure, but traverses the air in every direction, and lessens or increases its rate of progression as it pleases. To understand properly the mechanical action of the wing of the bird, we should first attentively observe one in its contracted or closed state, when it will be seen externally convex, its feathers, particularly the larger, overlapping each other, so that the smallest possible resistance shall be offered to its extension, or, in other words, to the bird's rising in the air. Carry on the examination of the wing after it is expanded, and it will then be seen that the action of drawing down the wings produces very different consequences to those which result from elevating or extending them. If this were not the case, and the flapping of the wings were but the reciprocal actions of two surfaces in opposite directions, the bird which chance had raised to an elevation could neither mount higher nor descend lower, for it would neither gain nor lose by the motions of its wings. In drawing down the wing a concave surface is presented to the air, by which the surface of resistance is increased; and how very considerable this must be, our anatomical detail just given of the pectoral muscles will prove, where the ratio of depressing power is more than three to one in favour of it.

2076. *Is it possible to enable man to fly like a bird?* We do not gravely ask this question; but although we smile while we do it, there are yet persons with so *slightly* an imagination

as to think it not impossible; but we believe no comparative anatomist has been thus misled. The immense power of the pectoral mass in birds can hardly be calculated; but we do know that, when it is compared with the same muscles in man and in quadrupeds, it is as twenty to one in their favour; and when we recollect that, in addition to this, birds are beyond comparison, in proportion to their bulk even, specifically lighter than ourselves, from the means they possess of admitting atmospheric air over the whole body; when we recollect this, we repeat, we must at once see the futility of all the attempts that have been made to attach wings to the human body which could raise it from the earth. Let us, however, more directly compare the body of man with that of birds. The human frame is made erect, with anterior extremities long and prehensile, and consequently naked. The lower extremities are by much the most massive, and altogether much more powerfully framed than the upper, for they were intended to bind him to earth, and to earth alone, as his proper domain. It is far otherwise with the bird, every part of whose frame offers direct evidence that flying was intended to be its distinguishing bodily faculty. The body of the bird, in the first place, is oval, which is the figure best adapted to overcome the resistance of the air; the spine also, which in man is flexible throughout, in the bird is ankylosed and wholly inflexible, purposely to offer a solid base for the support of the powerful muscles which operate on the wings. The sternum or breast-bone, so far from being flat, like our own, is much more extensive, and projects a keel-like ridge. The extensive surfaces of this bone are filled up with vast muscular masses, in proportion infinitely exceeding those of the most powerful village blacksmith ever seen. The clavicular bones, united at their apices, either angularly or somewhat circularly, are evidently intended to keep the shoulders apart, and to resist every effort at approximation. This subject offers us a new occasion to remark on the advantages of a comparative survey of the structure and functions of natural objects, by which fundamental errors correct themselves. Had the ingenious friar Bacon thus studied, he never would have taught that aerial flight in his own proper person was to be accomplished by man. In our examinations of the wing we cannot help observing that the articulation of the pinion is of a nature to give such a semi-rotatory motion to the great quill feathers, as forces them to *strike* the air with their flat surface, but to *rise* from it obliquely as the rower of the boat *feathers* his oar, from whence the term was probably taken. This action does not confine itself either to these feathers, but favours also an oblique backward depression of the whole wing, and not a vertical one; which motion, by virtue of the common resolution of forces, does two things at the same time—it supports the body in the air, and likewise carries it forward.

2077. *The tail of a bird*, furnished as it is with large feathers, we must also suppose to be an important portion of the apparatus of flight; but what part does it take in the action? Messrs. Willoughby, Ray, and many others, have considered its use to be directed to the steering of the bird, as the rudder is to the vessel. Dr. Paley observes, “The steering of a bird, in its flight, is effected partly by the wings, but in a principal degree by the tail;” which is also our view of the matter, though we are somewhat surprised at a previous observation he makes on the capability of the feathers of the wing to direct themselves, so as to increase the resistance to their descent, and to favour their ascent, to which he adds, “I believe that this faculty is not found in the great feathers of the tail.” As far as our own opinion goes, the faculty of altering the disk of the tail-feathers is nearly equal with that which they possess over those of the wing-feathers. We would, in proof, recommend an attentive examination of the flight of pigeons, their frequent ascents and descents, and their numerous evolutions, all which being within close and every day’s observation, render them particularly adapted for that purpose. Such observation will also show that the alterations in the disk of these broad tail feathers are too striking to deceive the eye. We think that after an examination of this kind, the *feathering the tail* generally, after the manner of the oar, will not be denied.

2078. *Borelli, the great master in animal mechanics*, also regards steering as one of the minor uses of the tail, but considers it principally intended to assist the body in ascending and descending, and likewise in obviating the vacillations of the body and wings. In his opinion it is to the body and wings that the direction of the flight is attributable; that is, as a vessel is turned about on its centre of gravity to the right, by a brisk application of the oars to the left, so a bird, in beating the air with its right wing alone towards the tail, will turn its fore-part to the left. That the tail, however, acts as a rudder, we think requires but little other proof than this, that in all birds of long flight, which have but a meagre tail, the legs are usually very long, which they invariably carry extended behind them as a compensation in steering for their paucity of tail. Anatomy however, our sure guide, will show that the caudal vertebræ of such birds have great mobility; and so far from having their motions confined, they are furnished with levators, depressors, and a very complex assemblage of lateral muscles, expressly placed there to powerfully and variously move the tail.

2079. *The act of flying has been thus described*:—“The bird first bends his legs, and springs with a violent leap from the ground; then opens and expands the joints of his

wings, so as to make a right line perpendicular to the sides of his body: thus the wings, with all the feathers therein, constitute one continued lamina. Being now raised a little above the horizon, and vibrating the wings with great force and velocity perpendicularly against the subject air, that fluid resists those successions, both from its natural inactivity and elasticity, by means of which the whole body of the bird is protruded. The resistance the air makes to the withdrawing of the wings, and consequently the progress of the bird, will be so much the greater, as the stroke of the fan of the wing is longer; but, as the force of the wing is continually diminished by this resistance, when the two forces continue to be in equilibrio, the bird will remain suspended in the same place; for the bird only ascends so long as the arch of air the wing describes makes a resistance greater than the excess of the specific gravity of the bird above the air. If the air, therefore, be so rare as to give way with the same velocity as it is struck withal, there will be no resistance, and consequently the bird can never mount. Birds never fly upwards in a perpendicular line, but always in a parabola. In a direct ascent, the natural and artificial tendency would oppose and destroy each other, so that the progress would be very slow. In a direct descent they would aid one another, so that the fall would be too precipitate." (*London Encyclopæd.* art. *FLYING*.) The mechanical operations of flying are further enlarged on in our *Hawking* department.

2080. *The flight of birds differs greatly with the species.* "Some fly by jerks," says Col. Montague, "closing their wings every three or four strokes, which gives them an undulating motion, very conspicuous in the woodpeckers and wagtails, and in most small birds; others fly smooth and even; and some appear to buoy themselves in the air without perceptible motion of the wings, such as the kite and kestrel-hawk. Most birds fly with their legs contracted and neck extended; but there are some whose length and weight of neck makes it necessary to contract it in flight, in order to bring the centre of gravity on the wings; to aid which the legs are also extended behind, as in the heron and bittern: others fly with extended neck, but are obliged to throw out their legs behind, as in the duck, goose, and other waterfowl." (*Ornithological Dict.* Rennie's edit. p. 182.)

2081. *The rapidity of the flight of birds is surprisingly great,* and when they are under very violent excitement, as either to escape danger, or in pursuit of prey, it can be compared to nothing but itself: we may instance the rate at which a hawk flies in pursuit of its quarry, which every one knows is rapid in the extreme. It is recorded that a falcon, belonging to a Duke of Cleve, flew out of Westphalia into Prussia in one day: and we read of another, said to have belonged to Henry the Fourth, King of France, which escaped from Fontainebleau, and in twenty-four hours after was found in Malta, a space computed to be not less than thirteen hundred and fifty miles, a velocity equal to fifty-seven miles an hour, supposing the hawk to have been on wing the whole time. But as such birds never fly by night, and allowing the day to be at the longest, or to be eighteen hours' light, this would make seventy-five miles an hour. It is probable, however, that he neither had so many hours of light in the twenty-four to perform the journey, nor that he was retaken the moment of his arrival, so that we may fairly conclude much less time was occupied in performing that distant flight." (*Ibid.*) M. Audubon, the distinguished ornithologist, has shot the passenger-pigeon of America, and on dissection found its stomach full of fresh rice, which, to have resisted the digestive process, must have been swallowed *not many hours* preceding its death; but the rice could not have been obtained within eight hundred miles of the place where it was killed. Though the nightingale, the willow-wren, and other birds of passage, fly with only half the swiftness, they may easily arrive in most parts of the south of Europe, or the north of Africa, in a few days.

SUBJECT. 2. *The Actions of Walking, Climbing, Perching, and Swimming, in Birds.*

2082. *The walk of birds is not generally long continued,* except in some particular species, as in the ostrich and cassowary, whose wings are rudimental only, the deficiency being amply made up in the superior strength, length, and muscularity of their legs, by which they are not only able to walk firmly, but to run with astonishing speed. All gallinaceous birds also, in consonance with their habits of seeking food widely spread over the ground, are adepts in walking, and most of them in running likewise. Some birds walk by alternately advancing each foot; others again hop only, which is thus effected—both feet being firmly fixed on the ground, the body is propelled forwards by the sudden extension of all the joints of the legs. Birds with sharp claws almost always hop; for, by bending the claws inwards to protect parts so vitally important to them, they would necessarily *step* less firmly than other birds; but, by displacing both feet at a time, locomotion is effected without injury to these prehensile organs.

2083. "*Station in birds,*" says Carus, "gives rise to many interesting considerations. The centre of gravity corresponds to the region where the anterior extremities are attached, partly because of the size of the sternum and pectoral muscles, partly because of the weight of the viscera in that situation (liver, stomach, heart), and lastly, because of the ex-

tension and flexion of the neck, as well as the occasional concealment of the head beneath the wing. In addition, the anterior extremities have no share in supporting the trunk in walking, whilst the trunk itself is placed nearly horizontal. As a necessary consequence of these circumstances, station on the posterior extremities requires that the legs should be directed forwards, at the same time that the tarsus and toes are elongated. The consequence is, either that the feet, of which the surface is extended by the length of the toes, reach under the thorax, or else, that when the legs are shorter, or placed more posteriorly, the trunk approaches more nearly to a vertical position. This is the case, for instance, in the penguins and puffin, and the only one in which the mode of station on two feet resembles the human." (*Gore's Translation*, vol. i. p. 360.)

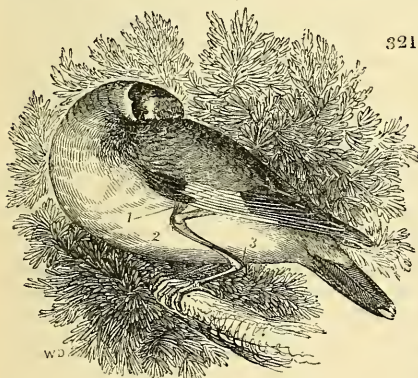
2084. *Climbing* also is much practised by some tribes of birds, particularly by such as are at once frugivorous and of heavy flight. This faculty is aided by a peculiar arrangement of the toes, as seen in the woodpecker, which has two directed forwards, and two backwards. The parrot is also an excellent climber, for he has not only a foot structurally adapted for the purpose, but he makes use of his hooked beak to assist him. In others also the bill is the principal prehensile organ, while a powerful attaching point or prop is gained by the tail of many climbers.

2085. "*Swimming* is much facilitated in birds by the quantity of air contained within the body, by the shape of the chest resembling the keel of a ship, and by the position of the feet at the posterior part of the body like oars, the toes also being frequently connected by membranes. The oar-like effect of these web-feet is farther assisted by the toes with their membranes lying close together when carried forwards, whilst, on the contrary, they are expanded in striking backwards. This operation is still farther favoured in some aquatic birds by the vertical position of the tarsus and toes in a line with the tibia; an arrangement, however, that is unfavourable to walking. Some birds, the swan for instance, expand their wings to the wind whilst swimming, and sail in that way, somewhat like the *Holothuria* and some *Molusca*. Diving is probably effected, partly by compression of the air-cells, and partly by the impulsion of the feet against the surface." (*Loc. cit.* p. 362.)

2086. *The repose of birds* is provided for by some admirable mechanical contrivances aided by muscular contraction. "One of the flexor tendons of the toes of birds accom-

panies a muscle which, descending from the pubis (1, *fig.* 321.) is seen to pass over the front of the knee at 2. From hence the united tendons proceed to the back of the heel (3); consequently a flexion of the knee and heel produces mechanically a bent state of the toes, which may be seen in the dead bird; and it is by means of this structure that the bird perches with safety, and is firmly supported when roosting, without any muscular action. This circumstance of the flexion of the toes accompanying that of the other joints of the lower extremity of birds, was long ago observed by Borelli, and attributed by him to the connection which the flexors of the toes have with the upper parts of the limb, by which they are mechanically stretched when the knee is bent. This explanation has

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been controverted by Vicq. d'Azyr and others, who have referred the effect to the irritability of the muscles. The opinion of Borelli appears, notwithstanding, to be well founded; for not only the tendon of the accessory flexor passing round the knee, but the course of the flexor tendons over the heel, and along the metatarsus, must necessarily cause the contraction of the toes when either of these joints is bent. And further, if the phenomenon were not produced on mechanical principles, it would be impossible for birds to exhibit it during sleep, which they do; or to prove the effect on the limb of a dead bird, than which nothing is more common. The utility of this contrivance is great in all birds, but particularly so in the rapacious tribe, which by this means grasp their prey in the very act of pouncing on it; and it is still more necessary to those birds which perch or roost during their sleep, as they could not otherwise preserve their position, when all their voluntary powers are suspended."

2087. *In those birds which repose standing on one foot*, as pelicans, storks, cranes, and other long legged waders, another contrivance presents itself, by which they are enabled to preserve the leg in a state of extension with little or no muscular effort. "There arises (observes the same authority) from the forepart of the head of the metatarsal bone a round eminence, which passes up between the projections of the pulley on the anterior part of the end of the

tibia. This eminence affords a sufficient degree of resistance to the flexion of the leg, to counteract the effect of the oscillations of the body, and would prove an insurmountable obstruction to the motion of the joint, if there were not a socket within the upper part of the pulley of the tibia to receive it when the leg is in the bent position. The lower edge of the socket is prominent and sharp, and presents a sort of barrier to the admission of the eminence, that requires a voluntary muscular exertion of the bird to overcome, which being accomplished, it slips in with some force, like the end of a dislocated bone." (*Rees's Cyclopædia*, art. BIRDS.)

CHAP. III.

THE POPULAR HISTORY OF BIRDS.

2088. "*If elegance of form*," says Mr. Swainson, "beauty of colouring, or sweetness of voice, were peculiarities which constituted the superiority of one class of beings over another, we should unquestionably assign to birds the highest station in the scale of the animal creation. No shadow of fear mixes with the pleasurable sensations with which they are viewed; and these feelings, moreover, are heightened by the ethereal nature of the creatures themselves. In a moment they may spread their wings, launch into boundless air, and be seen no more. We almost view them as beings of a happier world, alighting upon this 'dim spot called earth,' more as a place of temporary rest in their voyages through the regions of space, than as their permanent abode. They remind us of those invisible spirits of the unseen world, which, we are taught to believe, traverse the air on the wings of the wind; who alight, but for a moment, among the sons of men, and then depart to breath a purer atmosphere. Of all unintelligent beings, they alone are gifted with a musical voice, possessing both sweetness and varied expression. Their language, in some measure, is thus intelligible even to man, inspiring him with cheerfulness or melancholy. Hence it is that from among birds the poets have selected their sweetest themes. They are, both poetically and literally, the butterflies of vertebrated animals; flitting from one plant to another, living less on earth than in the air, and having their wings ornamented with feathers of bright or varied colours. In both we dimly see an indication of that existence which will separate the spirit of man from those cares, anxieties, and allurements, which chain him down to earth, as if it was his final and only stage of action. It is highly probable that the sweet Psalmist of Israel had some such thought, when he longed for the wings of the dove, that he might flee from earth and be at rest." (*Cabinet Cyclopædia* of Dr. Lardner, vol. lxxxiii. p. 2.)

SECT. I. *The external Coverings of the Body of Birds.*

2089. *The symmetrical proportions of birds*, and their brilliancy of clothing, have long been themes of admiration. Their forms are even more diversified than those of quadrupeds, although their sizes are not altogether so disproportioned. Here, as throughout the whole animal kingdom, we invariably find the form of the body as a whole, and the character of each separate part, to be framed with an especial view towards the particular habits and mode of life of the bird. Is the subject of observation one of those which are denied the faculty of flight, as the struthio or ostrich, how muscular, long, and large, are its legs! how small, weak, and disproportionate, its wings! If it be one of the *Grallæ* or waders we look at, we see legs equally long and naked, but very inferior in point of strength, as neither speed nor endurance are here required, but simple elevation only. Contrast the figures of both these subjects with the swallow, where almost the whole of the leg might be supposed to be transferred to the wing, and where the diminutive foot serves little other purpose than its prehensibility. Adaptation is the great and beneficent feature stamped equally on every member of the feathered race, from the mighty eagle to the pigmy tit.

2090. *Birds derive their principal external characters from their feathers*, to which naturalists have given technical names, according to the part of the body on which they grow. These have been already illustrated, both by figure and description.

2091. *The external characters of carnivorous birds are very strongly marked*, but they are at the same time less varied than those of other tribes. Almost the whole members of this class are furnished with wings of great extent, operated on by muscels of singular density of fibre, which enable them to keep long on the wing in search of prey; and having found it, these advantages render their pursuit generally successful, by the superior rapidity of their flight. The beak, by which death and dismemberment are effected, is singularly strong and hooked; the head altogether is large; the neck short, but very strong; and the breast broad, to give room for massive pectoral muscels: the thighs and legs are equally powerful, and their strong clutching feet are terminated with sharp formidable claws.

2092. *The external characters of the granivorous birds are*, throughout, the reverse of those of the *Carnivora*. With few exceptions they are as mild and timid in disposition as the

others are ferocious; and thus many of them congregate for protection. Destined to seek most of their food from the ground, the gallinaceous tribes are great walkers, and hence their thighs are muscular, their feet strong, and their bill well formed to pick up the scattered grain. Their flight is usually short, although their actual power enables them to move rapidly on the wing. This temporary rapidity of flight, undoubtedly, is given less for the purposes of travelling in search of food, than as a means of defence against predacious birds and beasts, both of which are singularly fond of their flesh.

2093. *Insectivorous birds* are very varied in their external characters, from the swallow to the woodpecker. The first of these birds is gifted with great powers of flight, by which he receives his food on the wing; while the other being much restricted in this respect, has a vision exquisitely keen, a tongue pointed with horn, and very extensible also, to enable it to transfix and extract the insects hidden in the bark of trees. The *Caprimulgus*, vulgarly called the goat-sucker, exhibits a head almost divided in twain by the expanse of its mandibles. This cavernous mouth, so disproportionate to his other parts, is necessary to his existence, the principal food being derived from the larger *Scarabæi*, which he takes open mouthed, and swallows while on the wing.

2094. *Frugivorous birds* are also diversified, both in the methods and organs immediately concerned in the collection of food. Some sit, and deliberately picking it from the tree on which it grows, eat it there; others first throw it to the ground for the purpose. The parrot tribe, again, are enabled to make use of the foot to gather fruit to carry it to the mouth, and deliberately to hold it until it is consumed.

2095. *The feet of birds present considerable diversities of figure and size*, but in every instance the size of these organs so correspond with their diversified habits, that no external character is less likely to deceive the observer. In the falcon we see a foot equally well framed for seizing and detaining prey, as for walking and perching, the claws being hooked, strong, and retractile. The woodpecker has a foot formed for climbing, two of the toes being placed forward, and two backwards. It is the same in the wry-neck cuckoo, &c. A limb adapted for walking firmly is seen in the crow and rook. The foot of the kingfisher has the three forward toes partially connected, the first and second being unconnected from the claws to the first joint only. The inner and hinder toe are placed on the inside of the foot, by which the heel is widened, and, as it were, pressed out. This formation is evidently favourable to the wants and habits of this bird, which, from some projecting branch, patiently watches the motions of the small fish in the stream below. The feet of the *Gallinacea*, as the common fowl and pheasant, like those of the crow, are well adapted for walking, in which so much of their time must necessarily be spent. Most of these have also a powerful spur appended to each leg, which becomes a very formidable weapon, and is further supposed to have some sympathies with the generative organs. The heron presents a foot and leg evidently formed for wading, being long, thin, and naked above the knee; it is also semi-palmated, the middle webbing reaching only to half the length of the toes. A great peculiarity in this foot, as well as in that of the nightjar, is the serrated or jagged state of the inner side of the middle claw, the uses of which in birds authors differ about, although we think that its use in the heron is clearly intended to render it more capable of holding the fish it captures, when too large to be instantly swallowed. A palmated foot, with three toes webbed to the extremity, is seen in the swan, duck, &c.; in viewing of which we can hardly fail to be struck with the unity of form and purpose observed in its long slender figure unfeathered also above the knee. A palmated foot, having the whole of the toes webbed, is seen in the cormorant and pelican; a pinnated foot, with the edges of the toes scalloped, in the coot, phalarope, &c. A lobated foot, where the toes are margined with a membranous edging, is seen in the swimming birds.

SUBSECT. 1. *Colour of the Plumage of Birds, and its variable Character.*

2096. *Colour has been used in the characterising and classifying of birds*, but its numerous variations, not only before the bird reaches the adult period, but in many at each succeeding moult, also are productive of error and confusion.

2097. *The young bird of every kind seldom has a plumage distinguished by beauty or variety*. In the majority a yellow tint predominates, but it is neither gaudy to attract, nor is it much varied to secure safety; nor until its first moult does it acquire its mature colours. The male among birds is commonly more brilliantly coloured than the female; and that is especially designed to attract attention, and to evince his sexual superiority is evident from the change which takes place at his season of love. All the male characteristics, as caruncles, fleshy papillæ, head crests, bearded throats, aigrettes, shine with more than usual lustre at this time. In the classification of birds, the infinite diversity of colours is one of the greatest obstacles which the zoologist encounters, and is the means of occasioning endless error and confusion. In the sport of hawking this has been particularly felt, for there it is not only the plumage of the young eyass, or brancher, which differs from the adult, but also that for several successive years each moult produces a change of colour, so that the ornithological descriptions of the different varieties given by even the best authors, are at

variance with each other. Nor are the characters left us in the best hawking treatises likely to clear up the difficulties of the subject. (See *Treatises on Hawking*, p. 648.)

2098. *Season has great influence over the colour of many birds.* Dr. Fleming on this subject observes, "Among the feathered tribes such instances of change of colour in the plumage during winter are numerous. They greatly perplex the ornithologist, and have been the means of introducing into the system several spurious species. The white grouse or ptarmigan (*Tetrao Lagopus*) may be produced as a familiar example of this kind of hybernation. This bird, like the Alpine hare, inhabits the higher Grampians, and is never found at a great distance from the limits of the snow. In summer its plumage is of an ash colour, mottled with small dusky spots and bars. At the approach of winter the dark colours disappear, and its feathers are then found to be pure white. In remarkably mild winters the change is incomplete, a few dusky spots of the summer dress remaining. In spring its winter garb becomes again mottled, and the bird loses much of its beauty. Even the young birds in their autumnal dress resemble their parents in the mottled plumage, which likewise becomes white at the approach of winter. Among the aquatic birds, similar changes in the colour of the feathers have been observed. The black guillemot, so common on our coasts, is of a sooty black colour during the summer, with a white patch on the wings. During winter, however, the black colour disappears, and its plumage is then clouded with ash-coloured spots on a white ground." (*Philosophy of Zoology*, vol. i. p. 17.) The extent of the change as already hinted at is evidently the effect of temperature; for in mild winters it is observed to be less complete than in severe ones. In Greenland, therefore, the black guillemot becomes of a snowy whiteness in winter. It is in hot countries that the most brilliant colours are seen in the plumage of the feathered races: the general excitement which heat produces occasions this effect, as the abstraction of heat in cold countries saddens or blanches the coatings of the birds of those localities.

SECT. II. *Geographical Distribution of Birds, and the Effects of Climate and Temperature upon them.*

2099. *The geographical distribution of birds*, like that of quadrupeds, is under the control of physical agencies. Certain birds, like certain beasts, are, by form and nature, peculiarly adapted to particular localities. The ostrich ranges at large on the desert plains of Africa, and the "pelican of the wilderness" roams wide over its waters in the full enjoyment of health and happiness. Remove them to the Zoological Gardens, and all that the care of their keepers and the admiration of surrounding multitudes can do for them, is to eke out a miserable existence to the shortest span. Others, as the migrating tribes, are not physically confined to particular climates. On the contrary, their roving is occasioned by want of food, and genial temperature. The swallow is not naturally a changeling, but would probably be constant and fixed to a certain locality, were it not forced out by hunger; for a humid clime and a decreased temperature have driven the insects on which he preyed into hybernation or death. In proof of this it is notorious that the same eaves, or the same pent-house, was used by his forefathers, by himself, and by his descendants, for the purposes of nidification. The banks of the Nile offer charms to the condor, and other tribes which prey on dead bodies, not because of the beauties of the scenery, nor from any local attachments, probably, but because its vast shores are the scenes of many deaths, and its vast waters the recipient of many carcasses. The hardy waterfowls of the North were once residents with us, until increasing population had scared them away by fear, and the drainage of the lakes had deprived them of a permanent home. Subject to the effects of temperature in influencing the locality of birds, we find that many feathered inhabitants of the polar regions, during the temperate seasons, locate themselves with us during our less rigorous winters. It is then the hardy wildfowl gunners launch the punt, or sit crouched for hours within a mimic grave, to watch the morning and evening flights of the vast family of the *Anseres*.

2100. *The variations of temperature* are grand agents in the local distribution of birds. M. Gloger has published an interesting paper on the height at which birds of different species are found, which is as follows:—" *Aquila fulva* in low situations; *Corvus Corax*, below 4,300 feet; *Nucifraga Brachyrhynchus*, in low situations; *Sylvia Tithys*, in higher localities; *S. Phœnicurus*, to 3,900; *S. Trochilus*, 4,400; *S. Attricapilla*, 3,700; *S. Rubecula*, 4,000; *Motacilla alba*, and *M. sulfurea*, 4,300; *Cinclus aquaticus*, 3,200; *Accentor modularis*, 4,600; *Accentor Alpinus*, on the most elevated summits; *Alauda arvensis*, 4,400; *A. alborea*, 200; *Fringilla cœlebs*, 4,000; *Loxia curvirostris*, 4,500; *Motacilla Troglodytes*, *Parus satur*, *P. cristatus*, *Sylvia Regulus*, *Certhia familiaris*, and *Sitta Europæa*, at 3,800; *Hirundo Urbica*, and *Cypselus Aspus*, on the highest summits." In the colder regions the numbers of birds are more restricted than within the tropics, where they multiply much faster; for there food is to be met with in greater plenty. It is not only in number, but in kind also, that this increase is observed; and thus insectivorous birds unknown in the north, teem in the south. It is in arid climes only that the ostrich, the cassowary, and other large birds, have the opportunity of developing their magnificent frames; and here also the gallinaceous tribes are seen

in abundance. It is owing to the effects of a higher temperature, likewise, that male birds are here more numerous than females, and that the ardour of the constitution thus generated shows itself in these phenomena. "The birds of cold countries are in general polygamous, in consequence of the fewness of the males in proportion to females in each species. The birds of warm countries having many males and few females are, on the other hand, monogamous." Climate not only increases the number and size of birds, and excites a predominancy of one sex over the other, but it shows itself in the lively and brilliant colours which are seen among those of tropical regions. Mr. Griffith observes, "We find that the aquatic races, the *Palmipedes*, the *Scolopaces*, the *Grallæ*, whose plumage is generally greyish dull, tarnished or livid, and which have more females than males, abound principally in the climates approximating to the poles; whereas the climbers, the *Insectivora*, the parrots, the woodpeckers, the colibris, the birds of paradise, the toucans, &c. whose plumage is of the most brilliant dye and richest variety of tints, have also in their species more males than females, and inhabit the warm climates almost exclusively." (*Cuv. An. King.* by Griffith, vol. vi. p. 128.)

2101. *The colours of tropical birds are perennial*, for in such climates the temperature never varies so much as to render any change in the colour of the covering necessary; but in the frigid zone it is essentially necessary, and is a kind provision of nature, seeing that the rate at which the bodies of birds cool here is much influenced by the colour of their skin and feathers. We are aware that the surface which reflects heat most readily suffers it to escape but slowly by radiation; the nearer approach, therefore, that the feathers make to a pure white, in that proportion will the heat of the animal body be retained. This subject having been entered on more fully under the geographical distribution of quadrupeds, we shall not dilate further on it here.

SUBSECT. 1. *The Food of Birds and its Effects on them.*

2102. *The nature and properties of food*, and the manner of its assimilation for the support of birds, do not materially differ from the same in quadrupeds. The digestive organs of both are essentially the same, and exhibit similar phenomena. To that subject, therefore, we refer for general information on those points. It may, however, be well to remark, that birds can bear to be confined exclusively to one edible for a longer period with greater impunity than quadrupeds; they however thrive best on variety. It is thus that rape and canary seeds are mixed for many of our caged warblers; for it is found that when they are too long confined to either of these, or to any other seed exclusively, epilepsy is apt to ensue, or otherwise that the alimentary canal throughout its whole extent becomes affected; in which case the anus protrudes, is tender and inflamed, and the tongue becomes corneous at its apex, which disease bird-fanciers call the pip. This would happen more frequently than it does to such as are allowed even two varieties of grain, were it not that most of them have succulent herbs and fruits given to them. Bullfinches, when wholly fed on hempseed, are apt to become black in plumage and emaciated in body. Ulcerations, also, sometimes destroy the corneous coat of the eye, or contractions of the feet occur. Nature's rules, which prescribe variety, cannot therefore, even in them, be infringed on with entire impunity.

2103. *The form and external characters of animals*, as they descend in the scale of complexity of structure, are certainly less under the control of physical agencies; which fact, however, is in direct opposition to what might be expected *à priori*. Thus we have somewhat less power over the form and external characters of birds, than we have over those of quadrupeds. A sufficient susceptibility of departure from the original type by the agencies of food, &c. however remains to establish our principle. The plumage of most of our song birds, beside the bullfinch, may be darkened by feeding them much on heating food of any kind, but particularly on any of the spicy seeds. Stimulants will also promote an early development of the sexual organs, and thus domestic fowls may be forced to laying and sitting at unseasonable times to gratify the taste for early chickens. To produce a premature disposition in hens to the breeding of young, the rearers of poultry stimulate the fundament with nettles. The size of fowls, also, may be much increased by an extravagant quantity of food and forced rest. It is to the end that exercise may not interfere with the process of fattening turkeys and other gallinaceous birds, that they are closely confined in the dark, and fed with mixtures of the most stimulating kind, by which they acquire great size; and their bodies not being condensed by exercise, the muscular parts are rendered tender, and the interstitial matters suffering no loss, their flesh proves also as juicy as tender.

2104. *The process of enlarging the liver of geese for the table of epicures*, as it is practised in France, is described at length by Sonnini (*Nouveau Dictionnaire d'Histoire Naturelle*, art. OIE). The object is to cause the whole vital forces to be determined towards this part of the animal, by giving it a kind of hepatic cachexy. In Alsace an individual buys a lean goose, which he shuts up in a small box so tight that it cannot turn in it; the back part of the bottom is furnished with a wide grating of rods, for the passage of the dung. In the fore part there is a hole for the head, and below it a small trough is kept always full of

water, in which some pieces of wood charcoal are left to steep. A bushel of maize is enough to feed it during a month, at the end of which time the goose is sufficiently fattened. A thirtieth part is soaked in water each night, and crammed down its throat next day, morning and evening. The rest of the time it drinks and guzzles in the water. Towards the twenty-second day they mix with the maize some poppy oil, and, at the end of the month, it is known by a lump of fat under each wing, or rather by the difficulty of breathing, that it is time to kill it, otherwise it will die of fat. The liver is then found weighing one or two pounds, and besides the animal is excellent for the table, and furnishes during its roasting from three to five pounds of fat, which is used in the cooking of vegetables. Of six geese, there are commonly only four (and these are the youngest) which answer the expectation of the fatterer. They are kept in a cellar, or cool place, with little light. The temperature most favourable for fattening is between 30° and 40° Fahr. so that it is only practised during the latter part of the autumn, the winter, and the early part of spring. The process was examined in detail by Mr. Loudon at Strasburg, in October, 1828, and will be found noticed in the account of the tour which he made in that year, in the fifth volume of the *Gardener's Magazine*, p. 309. "The Roman epicures who prized the livers of geese had already observed that darkness was favourable to this practice; no doubt because it prevents all distraction of the mind to other objects, and directs the whole powers towards the digestive organs. The want of motion, and the difficulty of respiration, may be also taken into consideration; the first, from its diminishing the waste of the system, and both from their retarding the circulation in the vena portarum, of which the blood ought to become hydrogenated, in proportion as its carbon unites itself to the oxygen which that liquor absorbs. This favours the formation of the oily juice, which, after having filled the cellular system of the body, enters into the biliary system and substance of the liver, and gives it that fatness and size which is so delightful to the palates of true gourmands. The liver thus only becomes enlarged consecutively, and the difficulty of respiration does not appear till the end, when its size prevents the action of the lungs. Among a hundred fatterers, there are scarcely two who adopt the practice of putting out the eyes of the geese, and even these do not resort to this barbarous practice till a day or two before they are killed; and, therefore, the geese of Alsace, which are free from these cruel operations, acquire a prodigious fatness, which may be called an oleaginous dropsy, the effect of a general atony of the absorbents, caused by want of exercise, combined with succulent food crammed down their throats." (*Ency. Brit. Sup. art. Food.*)

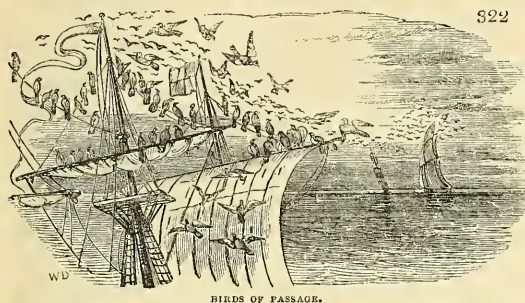
2105. *Food also appears to have an influence over the eggs within the body.* Dr. Haslam of America has observed that the ladybird insect (*Cicada septemdecem*) appears there at long intervals only; when their numbers are so immense, that the domestic poultry are fed on them, and such food has the remarkable effect of producing colourless eggs. There is indeed as little reason to doubt, that particular food can have an effect on the egg of the hen, as that certain grasses will alter the colour, taste, and smell of the milk of cows, which is notorious.

SUBJECT. 2. *The Effects of Domestication on Birds.*

2106. *The agencies of regulated temperature, stimulating food, selections of parents, and the aids of foster parentage also, are among the sources of many of the alterations observed between those fowls which have been long under the dominion of man, and such as are yet at large.* The swan, the goose, the duck, and all gallinaceous fowls, are extended in bulk at the expense of their powers of flight, in so much that they now depend on man wholly for support; they therefore give and receive mutual benefit. Even those only half reclaimed seek the fostering protection of partial domestication; thus the keeper's bell calls all the pheasants from the woods around to receive barley or buck-wheat. Many birds domesticate themselves; the robin, the wren, the swallow, and the martin, seek the habitations, and even court the company, of man. It is to the artifices practised in the close domestication of fowls so called, that they vary so extraordinarily in size, in colour, and character, from the original type. We now have them black or white, brown, blue or tawny, and some are varied with every intermixture of tint. We have the monstrous Dorking and the diminutive bantam, who, by the aid of cultivation and artifice, instead of strutting about as formerly with legs feathered to the toes like the grouse, now exhibits a delicacy of leg and foot not exceeded by that of any opera dancer. Domestication has multiplied the varieties of song birds almost to infinity. There are now more than twenty sorts of the canary bird; and to what number the varieties of the pigeon has extended, the thorough trained *pigeon-fancier* only can tell. Many laugh at these fancies, and when they absorb all the energies of the mind, as is occasionally the case, it is to be lamented; but when properly pursued, they are means tending to important ends. By them we enter into the hidden recesses of nature, and borrowing from her workings we also are enabled to produce beneficial alterations in the animal and vegetable world, such as were never before contemplated, and would have been thought to be impossible, until philosophy had shed her broad lights and irradiated all around.

SUBSECT. 3. *The Migrations of Birds.*

2107. *The periodical migrations of the feathered tribes* have been for ages a subject of interest and inquiry. The sacred page alludes to it more than once; for in those days the



BIRDS OF PASSAGE.

same species, which is migratory in one country, is stationary in another; as the linnet, who remains always with us, is migratory in Greenland. In Sweden the female chaffinches leave the males.

2108. *Birds of passage are such as take distant periodical flights.* Those that visit us in the spring, and leave in the autumn, are called summer birds of passage, as those which appear among us in the autumn, and leave us again in the spring, are known as winter birds of passage. Of the former the tribes are very varied; the latter principally consist of waterfowl. The different species do not observe the same time of either coming or going, neither do individual species depart at any set time. Among the summer birds the wheatear precedes the swallow, the swallow the martin, and the martin arrives before the corncrake. Among the winter passage-birds we observe, first, the woodcock, then the fieldfare, and after him the redwing. An early spring and an early winter hasten the departure of the one, and the coming of the other. Snipes are irregular in the time of their appearance. It would prove both an interesting and a useful amusement for the sportsman, to form a calendar of the coincidences of the simultaneous appearances of certain phenomena in vegetation, with the arrival and departure of the feathered tribes. He might then, with some certainty, prognosticate the visitations of some objects of interest to him by the leafing of some plants, the flowering of others, and the fructifications of a third; for, as aptly observed by Dr. Fleming, "As the state of vegetation depends on the temperature of the season, and the life of insects on the state of vegetation, we may safely conclude that the movements of the phytivorous and insectivorous birds must be dependent on the condition of plants. Linnaeus observed that the swallow returned to Sweden when the bird-cherry came into leaf, and when the wood-anemone flowered. He also found the arrival of the nightingale accompanied with the leafing of the elm. Stillingfleet says that the swallow returns to Norfolk with the leafing of the sycamore. It has also been observed that the cuckoo sings when the marsh-marigold blows." By some admirable instinct birds of passage return to the same situations for many successive seasons: many have been marked for the express purpose of noting their return; and the experiment has so often succeeded, as to warrant our concluding that, when it did not occur, it was rather the result of casualty, than any departure from the principle. Our fishing department will show that the finny tribes are equally perceptive of their former home; and thus the samlet, which having been captured by the minikin-fly in the former spring, and returned to the water by the humanity of the captor, may probably reward him in the spring in the form of a salmon.

2109. *The continued interchange of birds by migration, as very happily expressed by Mr. Griffith, "keeps up a sort of equilibrium of life."* The bird, passing in summer from the equinoctial climates to the cold regions of the north, and again in winter from the poles towards the equator, knows, by an admirable instinct, the winds and the weather which are favourable to his voyage. He can long foresee the approaches of frost, or the return of spring, and learns the science of meteorology from the element in which he almost lives. He needs no compass to direct his course through the empire of the cloud, the thunder, and the tempest; and while man and beast are creeping on the earth, he breathes the pure air of heaven, and soars upwards nearer to the spring of day. He arrives at the term of his voyage, and touches the hospitable land of his destination. He finds there his subsistence prepared by the hand of Providence, and a safe asylum in the grove, the forest, or the mountain, where he revisits the habitation he had tenanted before, the scene of his former delights, the cradle of his infancy. The stork resumes his ancient tower, the nightingale the solitary thicket, the swallow his old window, and the redbreast the mossy trunk of the same oak in which he formerly nestled. Linnaeus makes mention of a

starling, which came regularly to lay during eight years in the same trunk of an alder, although it emigrated every winter. Spallanzani also, who interested himself much with this subject, attached red threads to the legs of swallows, and had the satisfaction of observing their return during many successive seasons to nestle under his windows.

SUBJECT. 4. *The Means of Offence and Defence in Birds.*

2110. *The principal offensive weapon of the greater number of birds is the beak.* To this the rapacious tribes add their talons. With these the eagle seizes on even large quadrupeds, and distracting the attention of his victim by buffeting it with his wings, he tears out its eyes, and it then falls an easy prey. The falcon family live on the smaller beasts, and on birds in general; but conscious of their powers, it is not often that they are seen to wage war with each other. The flight of the falcon is rapid in the extreme, and it takes the advantage which its impetus gives it, to strike down the victim by its accumulated force. The less rapacious hawks hover on the wing, and thus insure their prey by a species of fascination. The vision of birds is a very potent weapon, for, as we have lately observed, they have the faculty of viewing objects far and near with equal precision. The heron stands motionless in the water, until his figure attracts little notice among the fish, who gradually are led to pass near him, when they are sure to be struck with unerring certainty. It was formerly believed, and is even yet not wholly discredited, that some effluvium passed from the legs of the heron and bittern, which actually attracted the fish within their reach. Others have made mention of a phosphorescent light, which slightly illuminated the breast of these birds, but the notice of which phenomena wants confirmation. Nevertheless it would be rash altogether to deny these suppositions; for, by comparison with many others, they are quite within the verge of possibility. Scent, we know, can be diffused through water—moisture is even favourable to its passage; electric sparks irradiated the cat by friction, and the glowworm attracts her mate by luminous markings.

2111. *The defences of birds* are still more varied than their means of offence. Against the fell destroyer man their wings aid them materially, and their fears assist them more: but against their fellow birds they have to balance flight against pursuit, and cunning against predacity. Stratagem is employed by birds to protect their young, as is seen in the partridge, who tumbles over and over as though wounded, to decoy men and dogs from her helpless young. The plover flies around the head of the dog or the man, whose approaches towards her callow brood greatly alarm her; but an admirable instinct has taught her to seem the least concerned when her fears are most urgent; and her sagacity often serves her purpose effectually.

2112. *The colours of birds* afford them much defence, and the groundlings are effectually screened from the sight of all by their variegated plumage. How few among the most keen-eyed sportsmen ever saw a snipe on the ground? Partridges may be seen on the fallows, but in the stubble they are rarely discovered. The dead leaf of winter and the woodcock's back so truly harmonise, that they seem made not to be disjoined.

2113. *In the nidification of birds*, their extreme caution and secrecy is their best defence. The nest is either placed in the most obscure situation, or otherwise it so completely accords with the matters around it, as to escape observation. But to mock all fixed laws, some of the confiding tribes which live around the habitations of man, build their nests immediately in view. Here surely something more than instinct has informed them that the confidence shown shall not be misplaced; and the martin, swallow, robin, and wren, pass unmolested, by common consent, because they have thus openly bespoken our protection. The rook, the magpie, the jay, &c. build aloft almost out of reach of man; while the devastated castle serves to secure the nest of the owl, the starling, and, still more generally, of the jackdaw. Some birds float their nests on the waters, some force their own bodies under the waves, and dive for safety. Others bury every part under water but the nostrils, as the moorhen and waterrail; while the pendent nest, hung by a thread over the river, secures the young of some from the depredations of the weasel, &c. &c.

SUBJECT. 5. *The Longevity, Decay, and Death of Birds.*

2114. *The duration of life in birds* bears no proportion to either their size or the time it requires to bring them to maturity. We have ourselves seen a small cockatoo, which had been in the family of Sir Claude Crespigny upwards of eighty years. Ravens have been known also to attain nearly the same age, and equal longevity is attributed to the eagle. Larks reach to eighteen and twenty years in a state of domestication, and canary birds to twelve and fourteen. The robin appears a short-lived bird, for he is constantly at war with his fellows; consequently, as soon as his powers flag, he is worried to death.

2115. *The progress of decay in birds* is only to be marked in those which are domesticated around us. We had an opportunity of observing this in one of the most interesting canary birds we ever saw. He was very often at liberty, and while any members of the family were reading around the fire, it was his delight to settle on one of the open books. Thus

situated, heat radiating from the heated leaves drew him to recline on his side, expand his limbs, and ruffle every feather to enjoy the genial warmth. It was difficult to displace him; he would take no affront, and when a leaf was attempted to be turned over, he allowed it to be drawn from under him, and attached himself as closely to the next. At seven years old his song was less loud and frequent, and his manners less volatile, but equally interesting. At ten years he had ceased to sing, and all the symptoms of decay gradually increased, but not to such a degree as to predict the expiration of the vital spark, which took place suddenly, at either twelve or thirteen years old, for it was not exactly known which, without any appearances of disease. We have heard of one canary whose life reached to sixteen years.

2116. *Death, we believe, occurs very suddenly in birds; they have great vitality, but the slightest interruption to it destroys the balance between expenditure and supply, and the vital functions cease without a struggle. This is one of the many, nay, of the innumerable, harmonies of nature towards these innocent beings, who, when living, are not tormented with an apprehension of death; and who, when it arrives, are removed suddenly and without suffering.*

SUBSECT. 6. *Method of Preserving the Bodies of Birds after Death.*

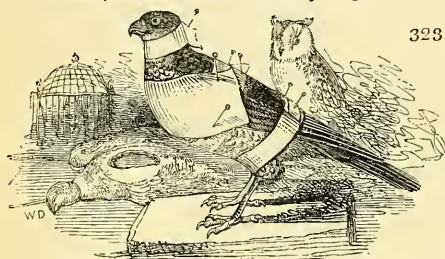
2117. *When a bird has been wounded, and it is intended to preserve the body after death, the most humane, as well as the most ready, method of dispatching it so as not to injure the plumage, is to squeeze it across the breast by means of the fore-finger and thumb, taking care however that the pressure does not fracture the bones. As soon as the bird is dead introduce a little cotton into the bill, to prevent any soiling of the feathers from any exudation from the mouth. It is prudent to tie up the beak also before commencing the operation of skinning, which should not be attempted until some hours after death, that the blood may have become completely coagulated. The following instructions for bird preserving and setting up are principally drawn from the fourth edition of *Taxidermy*, published by Messrs. Longman & Co. which we would strongly recommend to all lovers of Natural History as the best work on the subject. We have ourselves preserved many valuable specimens by the method here recommended, and with uniform success.*

2118. *Beccur's preservative paste, or arsenical soap, is a necessary article in the process, and may be made in any quantity after the following proportions: — Camphor, one ounce and a quarter; arsenic, in powder, eight ounces; white soap eight ounces; salt of tartar three ounces; powdered lime one ounce. Cut the soap in small slices, as thin as possible, put them in a pot over a gentle fire, with very little water, taking care to stir them often with a wooden spatula; when well melted, put in the salt of tartar and powdered chalk. Take them off the fire, add the arsenic, and triturate the whole gently. Lastly, put in the camphor, which must first be reduced to powder in a mortar by the help of a little spirits of wine; mix the whole well together. This paste ought then to have the consistence of flour paste.*

2119. *“The process of skinning a bird commences by stretching it out on a table, the head turned towards the left of the operator;” we divide the feathers of the belly right and left with small forceps, pull out the down which covers the belly, make an incision in the skin from the commencement of the sternum, or breast-bone, until beyond the middle of the belly, raise the skin on one side by the forceps, and separate it from the muscles with a scalpel, approaching as near as possible to the wings: this done, we put a little floured or powdered cotton on the skin and flesh, that the feathers may not stick to them; we force up, or push out, the thighs within the body of the skin, cut them between the thigh and leg in such a manner, that the former remains to be afterwards pushed back into the skin. By the help of the scalpel and the fingers we detach the skin as far as the rump, which we cut off. It is essential for this part to remain attached to the skin to sustain the tail feathers. We then take the already uncovered part of the body with the left hand, and continue to separate the skin from the two sides, cutting some little tendons, which we find before we come to the wings, with the scissors; we separate the wings from the trunk, at the junction of the humerus with the body, and restore them to their proper place. We continue to skin the neck, thrusting the head from within, and we uncover it, taking care not to enlarge the opening of the ears, and, above all, to be particularly attentive not to injure the eyelids in taking out the eyes, which are easily picked out with the closed points of the scissors; we replace the eye with chopped cotton, with which we fill the orbits. We separate the neck, take out the tongue, and carefully remove all the flesh which is between the two branches of the inferior mandible. We enlarge the occipital hole to extract the brain, by means of an iron instrument resembling an ear-picker; and, to finish cleaning out the inside of the head, we pass cotton and flax into it several times; we must, during the operation, besprinkle the humid parts with plaster of Paris or dry earth, from time to time, to prevent the feathers adhering to them and becoming dirty, and also divide the feathers to the right and left, for the same reason. We then take out the wings, cut them off at the second joint, and taking away the flesh, restore them to their place. This operation answers for small birds; and we anoint the wings in the parts which are destitute of feathers. We take away the flesh*

of the thighs, always preserving the bones of the leg, and put them back in their places."

2120. "If the bird be of a larger size, we must carefully take away all the muscles which adhere to the skin, as well as the fat; and if it has been killed by a gun, or holes are otherwise formed in the skin, they must be properly sewn up within. We fix a piece of thread to the first joint of each wing, drawing them together to the distance which they occupy when the bird is in flesh. This precaution, which does not appear to be of great importance, infinitely abridges the operation; for when the bird is mounted, the wings place themselves, provided they are properly tied within. It is now necessary to arrange the skin: we begin by replacing the skull (which we have taken care to anoint well); with the left hand we hold the thread which ties the beak; we assist the head in repassing into the neck with the fore-finger of the right hand; at the same time we are pulling the thread on the opposite side, taking care that the feathers at the edge of the opening do not enter with the edges of the skin. We lay the bird on the table, the head to the left, place the wings and claws properly; we put a plate of lead of about a pound weight on the tail; we raise the feathers of the edges of the opening with the thumb and fore-finger of the left hand, to prevent their being soiled, and anoint the inside of the neck, introducing the *preservative* alternately with the flax, without stuffing it too thickly, which is a fault in the greater part of mounted birds. We continue to anoint the back as far as the rump, and stuff it nearly one-third of its thickness, that the iron-work may be placed on a thick layer of flax. We then prepare



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a stand as seen in (*fig. 323.*), the proportions of which are equal to the size of the bird. The first wire, which is that of the central one, ought to be longer than the body of the bird; we form a little ring with the pincers, at about a quarter of its length, and point the opposite end. This wire being oiled, we introduce it across the skull, passing it into the neck in the middle of the flax, with which it is stuffed; so that, having crossed the skull, the ring of the wire is placed

a little towards the anterior part, and can receive the extremities of each of the wires, which have passed through the thighs and claws after being pointed, which operation is effected in the following manner:—We make a passage through the claw and bone of the thigh, by the aid of a brass awl, the size of the wire we wish to employ; we pass the iron which is to remain in the leg of the bird across the knee, and bring out interiorly, putting it into the ring, and the same with the other side, and uniting the three ends of the leg wires, and the end of the central wire beyond the ring; twist them together with a flat pincer, and lower them towards the tail. It still remains to form the fourth wire, which we call the tail-bearer: we take a piece of iron wire, form an oval with it by twisting the ends two or three turns in such a manner that, after being twisted, these two ends form a fork, and the oval is nearly the third of the length of the bird's body; the two teeth must be pointed with a file, and near enough together to enter the rump; their ends will be hid under the great feathers of the tail, and the oval in the body of the bird. If the subject is of a large size it will be necessary to tie the tail-bearer to the interior machinery, otherwise it may remain free."

2121. "All these wires being placed, and on a layer of chopped flax, we continue to anoint right and left, and especially at the rump; and in proportion as the preservative is placed, we furnish the part with chopped flax until the bird has attained its proper size, when we place it as seen in the cut." (*Taxidermy*, p. 58.)

SUBJECT. 7. Preserving the Vitality of the Eggs of Birds.

2122. The preservation of life in the eggs of birds, both before and after they have been set upon, is often a matter of some importance to sportsmen; to the naturalist it is equally so; for when he has met with a nest in his rambles that appears rare, by abstracting the eggs and placing them under another bird in lieu of the rightful owner, it often happens that the foster parent will adopt and rear them. Or again, when, in what may be called his ornithological rambles, he shoots one or both individuals of a pair which are unknown to him and probably are really exotic, under such circumstances it is common to look closely for a nest built by them, which having taken, he may attempt hatching by similar fosterage. Our more immediate attention is, however, directed to the sporting purposes to which preserving vitality in eggs may be applied. Partridges' nests are very frequently disturbed by mowers. Pheasants, also, are cut out in plantations; and in many other instances it may be desirable to rear young birds from eggs accidentally discovered. We need not inform the

reader that a temperature equal to that yielded by the parent bird, if it be duly and regularly maintained, is sufficient for this purpose. We will not enter upon the various methods of maintaining artificial heat further than to observe, that ingenious persons may turn all of them to account when a foster mother cannot be got. Our immediate purpose is to inquire how we may retain so much heat in the eggs, as will be sufficient to keep up their vitality until the hatching process is again brought into full action? We have ourselves, in our boyish days, carried home nests and eggs in our bosom and in our hat, and have thus kept up, without trouble, sufficient warmth for the purpose; but, boylike, the difficulty which always met us on the threshold — which was that of supplying a foster-parent — either deterred us from numerous attempts, or rendered such attempts abortive by mismanagement.

2123. *Foster parentage may, however, be gained from some birds*, particularly such as build near us and court our acquaintance apparently by their familiarity. Some of these will admit of many liberties being taken with their nests, and will even hatch the eggs, and bring up the young, of other birds. But our principal dependence is on the gallinaceous tribes, which we have made almost artificial animals by directing their habits into new channels. The common hen we can usually depend on to undertake the office of incubation, and also the rearing of the young afterwards; the guinea-fowl now and then only; the domestic pheasant seldom. Pigeons will also, in many cases, hatch the eggs and rear the young of other birds.

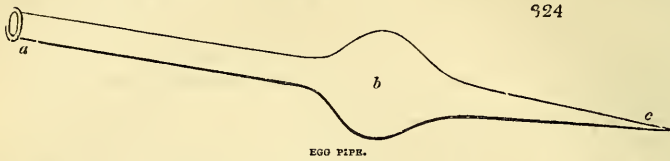
2124. *It is to the transporting of the eggs* which have already been sat upon, we must now draw our attention. In a sunny day a nest of eggs well surrounded with flannel, feathers, or even dry hay, &c. and placed in a basket, may be carried in the hand on that side to which the sun's rays are directed, with every prospect of success; very small eggs may be wrapped up and carried in the bosom. But of all the methods the hat offers the best resource, from the regular heat imparted by means of the head. We have known this successfully practised in several instances with pheasants', partridges', plovers', and even wild ducks' eggs; and we are pleased to find our testimony on the subject corroborated by a correspondent of Mr. Loudon's, who observes, — "A few years ago, whilst crossing a heathy country, my horse trod up a widgeon (*Marca Fistularis* Stephens); and on getting off to examine the spot, I found a nest with about eight eggs. I took off my hat, and put some dry herbage into it, upon which I placed the lining of the nest with the eggs, dividing one from the other by a little of the lining; upon which I put more of the herbage, and thrust my head carefully into my hat, and rode quietly home, about the distance of six miles; and from the time I found the eggs until I could procure a hen was about the space of two hours and a half; and in about one week the birds were hatched. I have since tried this experiment on eggs mowed or reaped over in the harvest time, and found it to answer; the warmth of the head in the hat being of sufficient temperature to prevent the eggs from spoiling, taking care to walk or ride quietly until a hen can be found." (*Magazine of Natural History*, vol. v. p. 333.)

SUBJECT. 8. *Preserving of Egg-shells.*

2125. *The same desire which enters the minds of many to preserve the forms of such birds as fall in their way by taxidermy, may influence them to retain the eggs also.* We ourselves had a small collection of British birds' eggs, principally consisting of the warblers. It was our particular endeavour to preserve the egg *entire*, contents and all; but the porous nature of the shell would not shield the contents from putrefaction and decay, in spite of baking, boiling, slow-drying, spirituous immersions, &c. Even varnishing would not stand our entire friend, although it prolonged the duration of our specimens. As it appears, therefore, necessary to the lasting preservation of the shell of an egg that we abstract the contents, what is the best method of accomplishing this abstraction?

2126. *To blow eggs.* It would seem unnecessary to detail the schoolboy method of "blowing" an egg-shell; but, as Mr. Waterton has condescended to treat on the subject, we need not be ashamed of so doing; and as he does it so naïvely, it shall be in his own words: — "Make a moderately sized hole at the sharp end, with a pointed instrument proportioned to the egg: thus, for a swan's egg use the point of your penknife; for a robin's take a small pin. Having made the hole at the sharp end, make one at the blunt end, and let this last hole be as small as possible. This done, apply your mouth to the blunt end, and blow the contents of the egg through the sharp end, where the hole is larger. If the yolk will not come out freely, run a pin or a wire up into the egg, and stir the yolk well about. Now get a cupful of water, and immersing the sharp end of the shell into it, apply your mouth to the blunt end, and suck up some of the water into the empty shell. Then put your finger and thumb upon the two holes, shake the water well within, and after this blow it out. The water will clear your egg of any remains of yolk or of white which might stay in after the blowing. If one sucking up of water will not suffice, make a second or a third." (*Magazine of Natural History*, vol. v. p. 516.) In the same respectable work a still better method, as it appears to us, is detailed by a correspondent, who informs us that the eggs in his collection

are not punctured at the end or ends, but on one side, by a hole so small as not to blemish the egg. He observes, "The eggs in my collection are all blown with one hole at the side, and so small as to be scarcely perceptible. I use a pipe, which I had made for the purpose, and have here given you a figure of it, with the method of using it, which may perhaps prove interesting to some of your readers who are fond of this pursuit (*fig. 324.*)



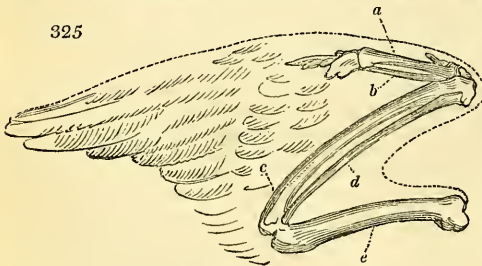
The method of blowing them is this: Make a small pinhole at the side of the egg, large enough to admit the point of the pipe, which is represented at *c*, one-sixth part of an inch; then apply your mouth to the entrance of the pipe (*a*) and suck as hard as you can, when immediately the contents of the egg rise, and are lodged in the ball of the tube (*b*) without proceeding higher towards the mouth. Next blow the contents down the pipe into a basin, or whatever you may have to receive it, and suck a little clean water up into the ball, and blow it into the egg; shake the egg in your hand for about a minute, and, applying the point of the tube, withdraw the water, which leaves the egg perfectly clean." (*Ibid.* vol. iv. p. 145.)

2127. To prevent the internal membrane which lines the shell from corrupting and injuring the shell, Mr. Waterton recommends to "take a wine-glass, and fill it with a solution of corrosive sublimate in alcohol. Then immerse the sharp end of the egg-shell into it, keeping your finger and thumb, as you hold it, just clear of the solution. Apply your mouth to the little hole at the blunt end, and suck up some of the solution into the shell. You need not be fearful of getting the liquor into your mouth; for as soon as it rises in the shell, the cold will strike your finger and thumb, and then you cease sucking. Shake the shell just as you did when the water was in it, and then blow the solution back into the glass. Your egg-shell is now beyond the reach of corruption; the membrane retains for ever its pristine whiteness; and no insect, for the time to come, will ever venture to prey upon it. If you wish your egg to appear extremely brilliant, give it a coat of mastic varnish, put on very sparingly with a camel-hair pencil. Green or blue eggs must be done with gum arabic, because the mastic varnish is apt to injure the colour." (*Loc. cit.*) It has, however, been suggested to Mr. Waterton by a friend, that the copal forms a better varnish than mastic for the purpose; and Mr. W. himself has, he thinks, improved on his own method by making one hole answer the purpose of two, particularly in the larger eggs. "Into this hole he introduces a straight wire, with a little piece of dry cotton or thread well tied round the end introduced. Then, holding the egg with the hole downwards, you see the wire, which acts as a piston, and forces a sufficient quantity of the contents of the egg out to enable you to get out the rest by sudden jerks."

SUBJECT. 9. *Method of Pinioning Fowls and of Preserving Birds which have been Winged from fatal Hemorrhage.*

128. *Pinioning fowls* is often practised to prevent them from escaping, as is the case with decoy ducks, generally. It is also frequently employed to prevent large birds from flying over boundaries, or from mounting high trees to roost upon. In such cases the practice of simply shortening the greater or primary quill feathers, as is often done, is only a temporary resource. It disfigures the bird, and it frequently happens that the growth of the feathers

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AMPUTATION OF WING BONES.

not being watched the bird escapes at last. The only effectual mode of pinioning is to amputate that portion of the wing to which the larger quill feathers adhere, which completely prevents their reproduction, and as effectually confines the bird. According as the subject of the operation is of the long winged or of the short winged kind, so the amputation, to be properly done, must be made nearer to the extremity of the wing (*a, b, fig. 325.*) or nearer to its articulation with the body (*d, c*), or in some cases as high as *e*. As observed by Colonel Montague in his *Ornithological Dictionary*, it has been usual to cut

off "a portion of the wing by a strong pair of scissors, or shears, and then, with a red-hot iron, searing the part, in order to stop the effusion of blood. The operation thus performed is tedious, painful, and not always attended with success; for as the principal artery contracts upon cutting the flesh, we have seen the part grilled for ten minutes with a red-hot poker, without closing the mouth of the artery, and the bird die in consequence of the loss of blood." We have ourselves seen cases of birds so lost; but which, in every instance, might have been avoided by first securing the blood-vessels after the following simple method. Have in readiness a needle and silk well waxed, the size of both being proportionate to that of the bird. If the bird is large the needle should be of sufficient length and strength, such as the darning-needle used for worsted stockings, and when of this size it may be armed with strong thread instead of silk, which also must be waxed to prevent its slipping off. As the prevention of hemorrhage is the grand object of the operation, so the operator should be made aware that the principal arterial trunks seek protection by passing on the inner side of the larger bones, where there are two, as at *a* and *b*. Keeping this in view will materially direct the unskilled operator how to proceed safely. Our cut (*fig. 325.*) is intended to represent a wing of the falcon or long winged birds. The *dotted lines* display the feathers, and the *full lines* those of the wing bones to be severed in the operation of pinioning, or otherwise used to sustain the bleeding vessels, which having been divided by accident, are to be secured by ligature. We have already presented comparative figures of the wing of a bird and the arm of a man, p. 612. to which we would refer, as also to our figure of the entire skeleton of a bird, p. 609. By attention to these, the explanation which is to follow will become more intelligible, and the operations required will be better understood.

2129. *Mode of operating.* Supposing the bird be of the long winged kind, as a falcon or a duck, &c. commence by cutting away as close as possible all the small feathers around the metacarpal or wing-bones of the bird at *a* (wrist bone of the human); having done this, pass the armed needle between the bones, but as close as possible to the lesser bone (*b*); again enter the needle on the opposite side of the larger bone (*a*), which will then include within its circumnutations the metacarpal artery. Now knot the two ends of the thread together with a double turn to prevent slipping, when drawing the ends rather tightly together will safely secure the vessel. Amputation may now be made from a quarter to half an inch or an inch below, as the bird may be small or large, by means of a pair of sharp scissors for minute birds, or shears for larger ones. But where it can be done, by all means rather employ a scalpel and fine saw, to shears or scissors; for when the wing is placed on a block, and cut off by means of a knife and hammer, there is some danger of splintering the bone, particularly in very large birds, for which reason we would avoid employing shears. Any moderately fine saw will answer the purpose, nor is any preparation necessary, further than to make a section of the soft parts with a knife.

2130. *The best method of operating on gallinaceous and other short winged fowls*, whose greater coverts and secondary quill feathers are sufficient to raise them on the wing, is as follows:—Prepare the wing by passing the needle and silk, or thread, between the radial and ulnar bones at *c* and *d*, directing the needle near to *d*, when inclosing the larger bone (*c*) within the tie, fasten off and amputate as before.

2131. *The high wing operation for fracture of the humerus (e)*, or for a wound of the artery, is first to pass a ligature a little within the skin, at a small distance from the bone, and a little above the fractured part, and tie it safely. Then lay bare the part and amputate, removing any splintered portions that might interfere with the healing of the stump. In these several operations, the bird may be set at liberty as soon as it is perceived that the ligature is sufficiently tight to stop the hemorrhage.

SUBJECT. 10. *The economical Uses of Birds.*

2132. *When we consider how large a proportion of our provisions are drawn from the feathered tribes*, and how many pleasures we derive from them in other ways, as those which they yield us in our sporting pursuits, and those which we owe to them as objects of beauty and song, both in their wild and tame states, we must acknowledge their utility and importance. In the arts they are useful in various ways, and in the manufacture of many articles of importance their several parts appear. They charm our eyes and ears by day, and enfold and cherish us in their downy embrace by night. Birds as an article of commerce are by no means unimportant, and we give and receive them or their products with much benefit to the community. Our cabinets are ornamented with their splendid colours; our museums are rendered more valuable by their varied forms; and the study of their varied structures and functions, dependent on the very different localities they occupy, add greatly to our anatomical and physiological acquirements. We shall not pursue this part of our subject further here, but refer to the economical uses of quadrupeds and of fishes, under both of which heads we have treated of these uses of animals more at large.

CHAP. IV.

FALCONRY, OR HAWKING, HISTORICALLY AND PRACTICALLY CONSIDERED.

2133. *As the eagle has been long called the king of birds*, so falconry was of old a royal sport, and though now little practised by either prince or peasant in Britain, it is yet almost as much in vogue in some eastern countries as heretofore. We propose first to treat of it as an universal sport, and next as one confined to Britain.

SECT. I. *The History of Falconry.*

2134. *At what period falconry was first practised by mankind*, is involved in much obscurity; but it may be reasonably supposed that it was not until the power that domestication had over the manners and habits of animals, became fully known, that attempts were made to enlist the shy and ferocious falcon as a confederate in the capture of birds and beasts. However, let the period be what it may when this aerial warfare was first practised, or in whatever quarter of the globe it occurred, we cannot but admire the genius and enterprise of the first falconer.

2135. *Falconry, in all probability, is of Asiatic origin*; we have, at least, abundant assurance that it had been very early practised in the east. Both Asia Minor and China present many ancient legends concerning it. In Turkey, Persia, and Tartary likewise, hawking was not only an early sport, but it is one which, in these countries, has maintained much of its popularity to the present day, a despotic government, and extensive tracts but thinly populated, having tended to perpetuate it. A writer in the *Penny Magazine* has very ably condensed, from the writings of the old eastern travellers, Father Rubruquis and Marco Polo, many interesting notices of the estimation in which it was held among the wandering Tartars during the thirteenth century. A palace at Changa-nor, or the White Lake, is particularly mentioned by Marco Polo as a favourite resort of the grand khan; the numerous waters and extensive plains here furnishing both aquatic and landfowl in abundance. He here found herons, cranes, swans, wild geese, and ducks of various kinds, as well as pheasants, partridges, and other birds indigenous to those countries, in abundance. "The grand khan," says the old Venetian, "derives the highest degree of amusement from sporting here with gyr-falcons and hawks." He also informs us that at another palace, near the city of Chandu, in Tartary, the grand khan keeps upwards of two hundred hawks, which, during his stay there, he always visited and inspected in person, at least once a week. The mews were pleasantly situated in a park, where a variety of animals of the deer and goat kind were pastured, to serve as food for the hawks and other birds employed in the chase. According to Marco, the khan had reclaimed eagles also, which were trained to stoop at wolves; and such was their size and strength, that none, however large, could escape from their talons. This grand khan (Kublai), who was at once emperor of Tartary and China, had two court officers, of the highest dignity, called "Masters of the Chase." In relating the number of his falconers, and the pomp with which he took the field, the Venetian might incur suspicion, were he not fully confirmed in all he says by several accounts of the imposing establishments and sports of the Mogul Tartars. Marco, who was a keen sportsman and falconer himself (as became a well-bred Italian gentleman of that period), may often have accompanied the grand khan, or emperor, with whom he stood in high favour. He says, that after residing the usual time at the metropolis of China, he always proceeded to enjoy the field sports in the plains of Tartary, "attended by full ten thousand falconers," who carried with them "a vast number of gyr-falcons, peregrine-falcons, and sakers, as well as many vultures, in order to pursue the game along the banks of the rivers." He adds, that "this host of falconers was not kept altogether in a body, and at one place, but separated into parties of from a hundred to two hundred men each, who followed the sport in various directions, and brought the greater part of the game they killed to the emperor." (*Penny Magazine*, part xxxiii. p. 475.) In these extensive plains it may be supposed that vast losses must occur, by the wildness of the hawks and the long flights of the game pursued, were it not for precautions as great as the mischances were numerous. Ten thousand guards, we are told, were employed to keep watch, and a signal station or tent was raised on an eminence, to receive whatever birds had strayed, or whatever other matters had been lost in the chasings. These annual hawking expeditions were also attended by the wives and ladies of the court, who had their own hunting retinue, independent of that of the grand khan. What with the attendant courtiers, physicians, astrologers, servants, and falconers, the multitude must have been immense. In China and Tartary, the system of exclusiveness in the practice of field sports prevailed as much as in the dark days of European history. Certain ranks only were allowed the privilege of sporting, nor might a nobleman, without permission, presume to hawk near the residence of the ruler. (See also something farther on the *Hawling Expeditions of the Khans of Tartary*, p. 18.)

2136. *In Persia falconry has been long established*, and that it yet continues to be practised, the *Sketches* of Sir John Malcolm offer very interesting proofs: — “We were kept several weeks at Abusheher, and amongst other amusements by which we beguiled the tedium of our sojourn at this dull seaport, was that of hawking. As the mode of killing the game differs essentially from that of other countries, I shall describe it, that such sportsmen as can read may judge of its merits. The sportsmen proceed to a large plain, or rather desert, near the sea-side; they have hawks and greyhounds—the former carried in the usual manner, on the hand of the sportsman; the latter led in a leash by a horseman, generally the same who carries the hawk. When the antelope is seen, they endeavour to get as near as possible; but the animal, the moment it observes them, goes off at a rate that seems swifter than the wind; the horsemen are instantly at full speed, having slipped the dogs. If it is a single deer, they at the same time fly the hawks; but if a herd, they wait till the dogs have fixed on a particular antelope. The hawks, skimming along near the ground, soon reach the deer, at whose head they pounce in succession, and sometimes with a violence that knocks it over; at all events they confuse the animal so much as to stop its speed in such a degree that the dogs can come up, and in an instant, men, horses, dogs, and hawks, surround the unfortunate deer, against which their united efforts have been combined. The part of the chase which surprised me most, was the extraordinary combination of the hawks and the dogs, which throughout seemed to look to each other for aid; this, I was told, was the result of long and skilful training. The antelope is supposed to be the fleetest quadruped on earth, and the rapidity of the first burst of the chase I have described is astonishing; the run, however, seldom exceeds three or four miles, and often is not half so much. A fawn is an easy victory; the doe often runs a good chase, and the buck is seldom taken. The Arabs are, indeed, afraid to fly their hawks at the latter, as these fine birds, in pouncing, frequently impale themselves on its sharp horns. The hawks used in this sport are of a species that I have never seen in any other country; the breed, which is called *cherkh*, is not large, but is of great beauty and symmetry. The novelty of the amusements I saw interested me; and I was further pleased, on accompanying a party to a village, about twenty miles from Abusheher, to see another kind of hawking peculiar, I believe, to the sandy plains of Persia; on which the Hubara, a noble species of bustard, is found on almost bare plains, where it has no shelter but a small shrub called geetuck. When we went in quest of them we had a party of about twenty, all well mounted. Two kinds of hawks are necessary for this sport; the first, the *cherkh* (that is flown at the antelope), attacks them on the ground, but will not follow them on the wing; for this reason the bhyree, a hawk well known in India, is flown the moment the hubara rises. As we rode along in an extended line, the men who carried the *cherkhs* every now and then unhooded and held them up, that they might look over the plain. The first hubara we found afforded us a proof of the astonishing quickness of sight of one of the hawks; he fluttered to be loose, and the man who held him gave a whoop, as he threw him off his hand, and set off at full speed. We all did the same. At first we only saw our hawk skimming over the plain, but soon perceived, at a distance of more than a mile, the beautiful speckled hubara, with his head erect and wings outspread, running forward to meet his adversary. The *cherkh* made several unsuccessful pounces, which were either evaded or repelled by the beak or wings of the hubara, which at last found an opportunity of rising, when a bhyree was instantly flown, and the whole party were again at full gallop. We had a flight of more than a mile, when the hubara alighted, and was killed by another *cherkh*, who attacked him on the ground. This bird weighed ten pounds. We killed several others, but were not always successful, having seen our hawks twice completely beaten, during the two days we followed this sport.”

2137. “*When at Shiraz*,” our author further observes, “the elchee had received a present of a very fine shâh-bâz, or royal falcon; before going out I had been amused at seeing Nutee Beg, our head falconer, a man of great experience in his department, put upon this bird a pair of leathers, which he fitted to its thighs with as much care as if he had been the tailor of a fashionable horseman. I inquired the reason of so unusual a proceeding. ‘You will learn that,’ said the consequential master of the hawks, ‘when you see our sport:’ and I was convinced, at the period he predicted, of the old fellow’s knowledge of his business. The first hare seized by the falcon was very strong, and the ground rough. While the bird kept the claws of one foot fastened in the back of its prey, the other was dragged along the ground till it had an opportunity to lay hold of a tuft of grass, by which it was enabled to stop the course of the hare, whose efforts to escape, I do think, would have torn the hawk asunder, if it had not been provided with the leathern defences which have been mentioned. The next time the falcon was flown gave us a proof of that extraordinary courage which its whole appearance, and particularly its eye, denoted. It had stopped and quite disabled the second hare by the first pounce, when two greyhounds, which had been slipped by mistake, came up and endeavoured to seize it. They were, however, repulsed by the falcon, whose boldness and celerity in attacking the dogs, and securing its prey, excited our admiration and astonishment. We had some excellent sport, also, with

smaller hawks at partridges. I was particularly pleased with one bird, which kept hovering over our heads till the game was sprung, and then, descending like a shot, struck its prey to the ground."

2138. *The practice of falconry seems to have been as prevalent in China as among the Moguls.* The monarch of Persia, with an embassy to the emperor of China, sent some very fine horses, who returned several *shankers*, which appear to have been hawks held in very high estimation. In India also falconry was no less common, and the native princes of the country, from time immemorial, have pursued it with undiminished ardour.

2139. *In eastern countries falconry appears even yet to retain much of its sway.* There it commenced its boldest flights, and there it was that the eagle was taught to stoop at the stag, gazelle, antelope, and wild boar; and there it is, according to Mr. Johnson's account, that the native Indian gentry still travel with their hawks, "the largest of which are even yet trained to kill deer by pitching on their heads, and picking out their eyes." This gentleman's relation of the hunting retinue of the nabob-vizier of Lucknow, of which he was himself an eyewitness, makes it equal to that of the grand khan, in both number and grandeur.

2140. *Of the practice of falconry in ancient Greece,* history appears to be silent. Pliny, it is true, is thought to allude to a method practised in Thrace, by which some birds were employed in the capture of others. (Lib. x. cap. 8.) Might not call-birds, as used by us, have been intended by these indefinite notices; for we can hardly believe that this observant naturalist would have contented himself with so trivial an account of what, in all times, must have been considered a remarkable conquest over the intractable nature of the most ferocious and wild of the feathered tribes.

2141. *At what exact period falconry was first practised among the Romans,* we are likewise no better informed. It does not appear to have been much known in the time of Vespasian; but that it did eventually become a favourite pursuit among them, we may judge from history. Gildas, in his first epistle, compares Maglocunus, when betaking himself to a monastery, to a dove, that with vicious turns and windings takes her flight from the talons of the hawk. Martial also, by his calling a hawk "a fowler's servant," would seem to hint that falconry was well established in his time. An author of some note gives to the Thracians the invention of hawking, and it is certain they practised it at an early period; but, however this may be, we think that the assertion of this same author, that the Romans derived their knowledge of it from so circuitous a source as that of the early Britons, is very questionable. The Thracians are known to have peopled a great part of Greece, and as the Romans derived many of their habits and pursuits from the Grecians, it is more probable, that, however tardy in their adoption of it, they were indebted to that people for the knowledge of it.

2142. *Whatever may be said to the contrary,* we have offered sufficient evidence that hawking was very prevalent in ancient times. One, to whom we owe many obligations for his literary aids, observes on this subject, "*Boulanger* proves from the testimony of many writers, that this sort of hawking was in use in ancient times; particularly from Aristotle, who says in his *Histoire Ancienne*, lib. x. that when the hawks seized a bird, they dropt it among the hunters; from Oppian also, who says that hawking is an easy diversion; and likewise from Martial, who takes the word fowler in this sense, —

'Prædo fuit volucrum, famulus nunc ancupis idem,
Decipit, et captas non sibi mœret aves.'

At this sport, Julius Firmicus Maternus says, they made use of hawks, falcons, and buzzards; and adds, that they had dogs also to spring the game. The pigmies in India, according to Ctesias Cnidius, used ravens, hawks, crows, and eagles, to hunt the hare and fox, instead of dogs. Pliny, speaking of hawks says, there are some that never take birds, but upon the ground; others that only take them flying round trees; others when they are perched upon the highest boughs; and others when they fly in the air at large. He adds also below, that in Thrace, beyond Amphipolis, men and hawks hunt together in a sort of society; that the men spring the game out of the woods and thickets, and that the hawks take them, and afterwards divide the spoil with the men. Ælian speaks of another manner of hawking; the men spread their nets, and lie still, and the hawks afterwards pursue the birds and fright them into the nests." (From *Antiquity explained, and represented in Sculptures*, by the learned Father Montfaucon, translated by David Humphreys, M.A. Fellow of T.C.C. vol. iii. chap. iv. sect. 7. p. 203.)

2143. *Mr. Pennant is of opinion that falconry was first practised in Scythia,* and that it was from thence disseminated over the northern parts of Europe. The Norwegians, we know, have long been famed for hawking, and they remain to this day well skilled in the practice of it; and moreover, it is from Northern Europe we still derive most of the hawks of a large size in use amongst the few remaining British falconers. The Norway breed of hawks, we are told, was in olden times in high esteem in England; indeed they were thought bribes worthy of a king. Geoffrey Fitzpierre gave two good Norway hawks to King

John, to obtain for his friend, Walter Le Madena, the liberty of exporting a hundred weight of cheese; and Nicholas, the Dane, was to give the king a hawk every time he came to England, that he might have free liberty to traffic throughout the king's dominions. They were also made the tenures by which some nobles held their estates from the crown: thus Sir John Stanley had a grant of the Isle of Man from Henry the Fourth, to be held of the king, his heirs, and successors, by homage and the service of two falcons, on the day of his or their coronation. And Philip de Hasting held his manor of Combertoun, in Cambridge-shire, by the service of keeping the king's falcons.

2144. *Falconry was likewise long ago introduced into Germany and Holland*, and the latter country continues, even yet, to rear falcons for the service of other nations. The Saxons were likewise well skilled in hawking, which they in all probability derived from the Danes. Burton's researches, as detailed in his *Anatomy of Melancholy*, led him to the following conclusions on the origin of hawking,—“It was never heard of amongst the Romans,” which assertion he seems to found on what he finds in Jos. Scaliger, *Comment. in Cirin*, fol. 344.; *Salmuth*, 23, de Nov. Repert. Com. in *Pancir*. “The Greek emperors,” he continues, “began it, and now nothing is so frequent: he is nobody that in the season hath not a hawke on his fist: a great art, and many books written of it. It is a wonder to hear what is related of the Turke's officers in this behalf, how many thousand men are employed about it, how many hawkes of all sorts, how much revenewes consumed on that only disport, how much time is spent at Adrianople alone every year, to that purpose. The Persian kings hawke after butterflies with sparrows, made to that use, and stares; lesser hawkes for lesser games they have, and bigger for the rest, that they may produce their sport to all seasons. The Muscovian emperours reclaime eagles to fly at hindes, foxes, &c.; and such a one was sent for a present to Queen Elizabeth: some reclaime ravens, castrils, pies, &c. and man them for their pleasures.”

2145. *Falconry*, we may therefore conclude, has had a long and extensive sway, and has been more especially pursued by the higher classes. To them it even became the insignia of their rank; their legislators protected it, and their poets eulogised it. In these times, when the living objects of nature were the principal subjects of regard, it is not to be wondered at that references to the sports of the field figured in their gravest discussions, or were brought in aid of the ordinary transactions of life. The *bows-shot* was a common measure of distance, and if history be correct, the flight of the falcon has been used for the same purpose. Kenneth the Third, to reward signal services in the battle-field, performed by a peasant and his two sons, gave them so much land on the river Tay as a falcon from a man's hand flew over till it settled; which being six miles in length, the track was afterwards called Errol, and now forms the patrimonial estate of the Earl of Errol, whose coat of arms, as directed by Kenneth, consists of three escutcheons, gules, to intimate that this trio had been three fortunate shields of Scotland, with a falcon for a crest and two ploughmen as supporters.

2146. *Strutt cannot, however, satisfactorily trace hawking to an earlier period than the fourth century*, and he appears, with Burton, to consider Julius Firmicus, who lived about that time, as the first Latin author who has noticed falconers, and the art of teaching one species of birds to fly after and catch others. An English writer, he also observes, asserts, but on authority not known to him, that Frederick Barbarossa first invented hawking for his amusement, when he was engaged in besieging Rome in the twelfth century. It is however not very probable, we think, that a sport which requires so much preparation and patience, should have been perfected in the tented plain, or that this emperor, who in all field sports was said “to be second to no one,” was ignorant of the existence of falconry. Frederic the Second, who ruled early in the thirteenth century, was also a falconer; and further, he wrote a book on the subject, bearing for its title, *De Arte Venandi cum Avibus*, which was printed from manuscript at Augsburg, A.D. 1596.

2147. *The French also were early devotees to hawking*, but whether they preceded us in their knowledge of it is doubtful, although an authority supposes such to be the case from the fact, that many of the technical terms in old English falconry are of French extraction, but many more are derived from the Saxon. The probabilities, we think, greatly favour our having derived it from our Saxon masters, rather than from our French neighbours, who were in those days not much more advanced in the arts than ourselves. If, however, they were not coeval with us in falconry, we have reason to believe they were not far behind us. This sport is often noticed in the capitularies of the eighth and ninth centuries, “At which time,” says Strutt, “the grand fauconnier of France was an officer of great eminence; his annual salary was four thousand florins; he was attended by fifty gentlemen, and fifty assistant falconers; he was allowed to keep three hundred hawks; he licensed every vendor of hawks in France, and received a tax upon every bird sold in the kingdom, and even within the verge of the court; and the king never rode out upon any occasion of consequence, without this officer attending upon him.” We, however, are warranted in stating, that falconry in France is now less practised even than in England. In some of the remote provinces we were informed that the sport was occasionally pursued, but that even there it was not popular, and was now discontinued.

SECT. II. *The History of British Falconry, or Hawking.*

2148. *The practice of falconry in England*, without doubt, commenced with the advent of some of the hostile northern intruders, but at what exact period is not apparent. Mr. Pennant is unable to detect any certain marks of it before Ethelbert the Saxon monarch, in the year 760, when this king wrote to Germany for a brace of falcons, "which would fly at cranes, and bring them to the ground, as there were few such in Kent." But other records prove that in the sixth century the Roman Britons had arrived at much dexterity in the choice and management of falcons and hawks.



HAROLD II. HAWKING.

In the ninth century hawking appears to have become so popular with the Anglo-Saxons, that it was even imperative on every young man of condition to become a proficient in it. Previous to this, however, and as early as the middle of the eighth century, Winifred Boniface, archbishop of Mons, had presented to Ethelbert, king of Kent, one hawk and two falcons, which appear to have been so highly prized, that the said Boniface was requested by a king of the Mercians to send him also "two falcons that had been trained to kill cranes." "Alfred the Great," says Strutt, "is commended for his early proficiency in this, as well as in other, *fashionable* amusements: he is even said to have written a treatise upon the subject of hawking, but there is no such work at present in existence that can, with any degree of certainty, be traced to him. The pastime of hawking must, no doubt, at this period have been very generally followed, to call for the prohibition inserted in a Chapter granted to the Abbey of Abington, by Kenulph, king of the Mercians, which restrains all persons from carrying of hawks, and thereby trespassing upon the lands belonging to the monks who resided therein." The hawk was figured as an emblem of royalty; thus Harold the Second is seen in the Bayeux Tapestry, as represented in *fig. 326*. Innumerable are the authorities which prove also that the amusement of hawking continued to be a very fashionable one to the end of the Saxon era.

2149. *The advent of the Danes*, and the assumption of the throne of England by William the Conqueror, a monarch passionately fond of field sports, tended greatly to the advancement of the hawking mania, as well as to increase the severity of the laws for the preservation of game of all kinds. The protecting enactments which referred to hawking alone during a few successive reigns, were almost innumerable; and they were equally arbitrary and severe. None but persons of the highest rank were even allowed to be in possession of a hawk, nor was it until the *Carta de Foresta* had been forced from King John by the "barons bold," that every free man was privileged to have eyeries of hawks, falcons, and eagles in his own woods, with heronries also. The oppressive nature of the laws relating to this sport, notwithstanding this concession, continued to be felt during several succeeding reigns. In the 34th of Edward the Third, it was made felony to steal a hawk: to take its eggs even in a person's own grounds, was punishable with imprisonment for a year and a day, besides subjecting the offender to a fine, at the king's pleasure. In later reigns, although the term of imprisonment was reduced to three months, the unfortunate culprit, ere he was liberated, was forced to find security against a repetition of his offence for seven years, or to lie in prison until he did so. As a refinement, also, in the legal severity of the enactments made for the protection of this sport, the following singular punishment was denounced for hawk stealing: — "*Si quis acceptorem alienum involare præsumpserit, aut sex uncias carnis acceptor ipse super testones comedat, aut certè, si noluerit, sex solidos illi cujus acceptor est, cogatur exsolvere, multæ autem nomine solidos duos.*" It was Edward the Third also, who, to protect the owners of hawks from the loss to which the capricious nature of these birds might subject them, issued an express mandate that any one finding a hawk of any species, was immediately to take it to the sheriff of the county, who was to cause a proclamation to be made in all the principal towns of such county, by which the owner becoming acquainted therewith might receive it back from the sheriff, on payment of the cost incurred for its maintenance. Should it not be claimed in four months, such hawk was to become the property of the finder, provided that he was of a proper rank; but if he was *ignoble* and *unqualified*, then the hawk was to remain in the keeping of the sheriff. The finder of a hawk attempting to secrete or appropriate it to his own use, was guilty of felony, and was actually punished as a felon.

2150. *During many centuries hawking appears to have been the all-absorbing pursuit*, not only in England, but equally so throughout Europe; indeed, it might be said that a hawking mania then raged universally. Kings and princes not only engaged in the actual chase itself, but they also voluntarily undertook the drudgery of training and feeding their hawks themselves. When employed in their most important offices, they were often seen with a hawk on their hand: indeed, they seldom moved without them, their hawks being appar-

ently considered as much their familiar acquaintances and attendants, as pet dogs are with us of the present day. King Stephen also, like Harold, is almost invariably portrayed with this favourite bird resting on his hand. Even Archbishop Becket could not go to the French court on an embassy without his hawks and falconers. Few persons of high rank ever travelled without them, and they formed part of the equipage of every man of condition, whenever he moved from place to place; nor would a true and valiant knight part with his hawk even to procure his own liberty when taken prisoner, as though in losing his hawk he also lost his honour. Edward the Third, according to Froissart, had with him, when he invaded France, thirty falconers on horseback, who had the charge of his falcons. In fact, the hawk in these times might be truly said to be the *rara avis in terris*.

2151. *The gentle sex in these times, we are led to believe, were equally affected with the hawking mania as the gentlemen, and it would appear to have been as unfashionable for a lady of those days, as for a knight, to be unaccompanied by a hawk. Thus, in the Lay of the Last Minstrel, canto vi. we find —*

“The ladye by the altar stood,
Of sable velvet her array,
And on her head a crimson hood,
With pearls embroidered and entwined,
Guarded with gold, with ermine lined,
A merlin sat upon her wrist,
Held by a leash of silken twist.”

To this picture the poet appends the following note: — “A merlin, or sparrow-hawk, was actually carried by ladies of rank, as a falcon was, in times of peace, the constant attendant of a knight or baron. Godscroft relates, that when Mary of Lorraine was regent, she pressed the Earl of Angus to admit a royal garrison into his castle of Tantallon. To this he returned no direct answer; but, as if apostrophising a goshawk which sat on his wrist, and which he was feeding during the queen’s speech, he exclaimed, ‘The devil’s in this greedy glade, she will never be full.’ Barclay complains of the common and indecent practice of bringing hawks and hounds into churches.” Indeed, the extent of the hawking mania of these times seems to have had no bounds: thus Frederigo, the hero of Boccaccio’s ninth novel, although he had spent all his substance, refused to part with his favourite hawk; and when his mistress is importuned by his son to beg it of him, she replies, “how can I offer to take away from a gentleman *all the pleasure he has in life*.” The cost likewise of these birds corresponded with the anxiety to obtain them: a goshawk and a “tassel-hawk” appear to have been sold for 100 merks; and it is reported of Sir Thomas Monson, who lived in the reign of James I., that he had given 1000*l.* for one cast of peregrine falcons.

2152. *On the practice of hawking as an especial attribute of nobility in former times, a writer in The Penny Magazine thus severely, though forcibly, expresses himself: — “The tokens and proofs of nobility or distinction, in different ages and countries, would form a very ludicrous list. During the Middle Ages a European showed his rank by having a hawk on his fist, as a Chinese mandarin, even of our own days, claims the honour due to learning by letting his finger-nails grow to an enormous length. A knight seldom stirred from his house without his falcon on his wrist, and his hound at his heels; and when his hunting and hawking were over for ever, if he did not die in the field of battle, one of the two animals was generally carved on his monument — the dog at his feet, or the falcon on his hand. At the first revival of the art of painting in Italy and Germany, and for more than two centuries after, a portrait was seldom executed without the painters introducing in it a falcon or a hawk. We have seen some old Italian frescoes, in which a long line of knights and ladies were painted, all in the same attitude, with full-front faces, and every one of them fisting a bird — thus looking more fiercely but as monstrously as farmer Flamborough’s family picture in The Vicar of Wakefield, in which every individual held an orange. Sebastian Brandt, a German, the author of the Latin poem, Stultifera Navis (The Ship of Fools), complains that in his time (about the year 1485), the gentry were even used to take their hawks and hounds to church with them.” (P. 391.)*

2153. *The fascinations of hawking, we have said, engaged the ladies also, with whom indeed it appears to have been as popular as it was with the men. Strutt introduces a print, copied from a manuscript of the fourteenth century, illustrative of the female passion for hawking, and further observes on the subject: — “The ladies not only accompanied the gentlemen in pursuit of this diversion, but often practised it by themselves; and, if we may believe a contemporary writer in the thirteenth century, they even excelled the men in knowledge and exercise of the art of falconry.” (P. 26.) We cannot, however, commend their tastes, although we doubt not the ability, the activity, and the courage of females to be equal to this, and even more; but they, the females, shine most in gentler exercises, and rule most omnipotently when they appear the least masculine.*

2154. *A proficiency in all manly exercises constituted the principal points in the education of a gentleman, of whatever rank, of these times, and learning was held in little estimation. On grave authority it is told us, that it was enough for the sons of noblemen to wind their*

horn and carry *their hawk fair*, and to leave study and learning to the meaner people. That ancient type of all excellence, *Sir Tristram*, is made by Spenser to boast —

“Ne is there hawk which mantleth on her perch,
Whether high tow’ring or accoasting low,
But I the measure of her flight doe search,
And all her prey and all her diet know.”

This neglect of learning in these dark days, however, could not escape occasional censure; thus Cleland, who is said “to have re-echoed the *Basilicon Doron* of king James,” observes “Ignorance is thought an essential mark of a nobleman by many. If a young child loveth not a hawke and a dogge while he sitteth on his nursel lap, it is a token, saie they, he degenerates.” In Bishop Earle’s character of a proud knight it is also said, “A hawk he esteems the true burden of nobility, and is exceeding ambitious to seem delighted in the sport, and to have his fist gloved with jesses.” A bishop of Ely, in the reign of Edward III. would probably not have expressed himself thus sarcastically on the subject; for, as a proof of the devotion of this titled divine to this sport, he is said to have excommunicated certain persons for stealing a hawk, that was sitting on her perch in the cloisters of Bermondsey Abbey in Southwark. This notice confirms the account already noticed, that it was not altogether unusual for the favourite hawk to accompany its master to church; for it appears that this very hawk was stolen during divine service; and, what is more extraordinary, that it was the property of the bishop, but taken to the cloisters, as we should suppose, not by the bishop himself, but more probably by his servant.

2155. *The restrictive character of hawking in olden times* is well exemplified in the list which prescribes the hawks that in the reign of Henry VII. were allowed to be used by each person according to his rank. That presented to us in *The Booke of St. Alban’s* is as follows: — “The eagle, the vulture, and the merloun, for an emperor; the ger-faulcon, and the tercel of the ger-faulcon for a king; the falcon gentle and the tercel gentle for a prince; the falcon of the rock for a duke; the falcon peregrine for an earl; the bastard for a baron; the sacre and the sacret for a knight; the lanere and the laneret for an esquire; the marlyon for a lady; the hobby for a young man; the gos-hawk for a yeoman; the tercel for a poor man; the sparrow-hawk for a priest; the musket for a holy water clerk; the kesterel for a knave or servant.” (*Strutt’s Sports and Pastimes*, p. 32.) In Scotland also, as the legends bear testimony, falconry had its votaries, and that, for the encouragement and protection of the practice, it was enacted in the fifteenth century, “That nane destroy heronise wis for three zenis. Item, it is statute and ordanint that quahair ony heronis biggis or his nestis eggis or birdis, enduring the three zenis, with certificatioun, that it sal-be a punet of dictay. And they that beis conuict thairfor, salt pay ten puds of vulaw to the king and dictay to be takun be the justic clerkis thairupon. And quahair it beis understandin, that for the plesure of the kingis hienes ony persounnis keipis the said nestis, and suffers no persounnis to destroy thame, they sall have thankis and favouris of our Souerane Lord, as effeiris, and ane vulaw to be geuin thairfor.” An interesting proof of the popularity of falconry in this country is seen in the anecdote related of Sir Ralph Sadler that, while he had the unfortunate Mary under his care, he indulged his royal prisoner in the gratification of hawking the river. In Ireland likewise it was much practised and warmly protected, where, as early as 1481, it was enacted, “that whatsoever merchant shall carry any hawk out of Ireland, shall pay for every goshawk 13s. 4d., for a tercel 6s. 8d., for a falcon 10s., and the poundage upon the same pain; and the person that bringeth any such hawk or hawks to the king, shall have a reasonable reward of the king, or else the same hawk or hawks for his labour.

2156. *The accession of the Tudors was equally marked with the love of hawking.* Henry VII. patronised it both by precept and example; and his successor, Henry VIII. who was even more attached to it, had nearly paid the forfeit of his life in pursuing it, “for on a time, as he followed his hawk on foot, he attempted to leap over a ditch near Hitchin with a pole, and the pole broke; so that, if one Edmund Moody, a footman, had not leaped into the water, and lift up his head, which was fast in the mud, he had been drowned.” In the twenty-seventh year of his reign “this king issued a proclamation reciting his great desire to preserve the partridges, pheasants, and herons, from his palace at Westminster to St. Giles’s-in-the-Fields, and from thence to Islington, Hampstead, Highgate, and Hornsey Park; and that if any person presume to kill any of these birds, they were to be imprisoned, and also to suffer such other punishment as to his serene highness should seem meet.” In this reign also it became common to import hawks and herons from other countries, which paid fixed duties on being landed.

2157. *Queen Elizabeth was also a practical patroness of falconry.* The second parliament, held after her accession to the throne, passed an act which recites, that, “Whereas her majesty, as also the noblemen, gentlemen, and divers other persons, of great dominions and possessions, had breeding within their woods and grounds divers yeries of hawks of sundry kinds, to their great pleasure and commodity, that if hereafter any person shall unlawfully take any hawks, or their eggs, out of the woods or grounds of any persons, and be thereof convicted

at the assizes or sessions, on indictment, bill, or information, at the suit of the king or of the party, he shall be imprisoned three months." This last statute concerning falconry (with



QUEEN ELIZABETH HAWKING.

the exception of a clause in 7 Jac. I. c. 10, which limits the time of hawking at pheasants and partridges) was also promulgated in the 23 Elizabeth, c. 10. and it is pleasing to remark, that it savours of an improvement in the spirit of the times, which should equalise protection among all classes. By this "no person was allowed to hawk in another man's corn, after it was eared, under pain of paying forty shillings, or being imprisoned a month." In Turberville's treatise on falconry is a representation of Elizabeth on horse-back on a hawking expedition (*fig. 327.*), and we have documentary evidences to prove that she was well inclined towards hawking, although not equally so as to

coursing. Much as we ourselves admire coursing, we cannot but wonder at this preference, seeing that hawking had so long been a confirmed pursuit of kings, queens, and nobles.

2158. *James the First*, after the fashion of those days, was, while yet a boy, portrayed with a small hawk on his hand; but he does not seem to have devoted himself much to this sport; on the contrary, in his book of advice to his son Henry, Prince of Wales, after strongly recommending hunting with hounds and other manly exercises, he adds, "As for hawking I condemn it not, but I must praise it more sparingly, because it neither resembleth the warres so near as hunting doeth, in making a man hardie and skilfully ridden in all grounds, and is more uncertain and subject to mischances, and, which is the worst of all, is there through an extreme stirrer-up of the passions."

2159. *The decline of hawking*, we apprehend, may be dated from the middle of the seventeenth century, and we can hardly agree with Strutt that it was in its zenith during that epoch. We have just noted the pedant, James I. already treating of it coldly, which, in our opinion, was a strong sign of its approaching fate. Already, in the sixteenth century, it had been forbidden to hawk from Easter until the corn was reaped; and although Hentzner, who wrote his *Itinerary*, A.D. 1598, affirms that it was in his time generally pursued by the English nobility and gentry, yet we have every reason to suppose it was fast declining even then. Indeed, were not the natural changes worked by fashion, caprice, and love of novelty, sufficient to have effected this, the introduction of fire-arms must have done it, as soon as the practice of sporting with the musket had reached sufficient perfection to show how much more readily, and how a much wider range of warfare against birds and beasts of all kinds, might be effected by its means. The decline of hawking has not, however, taken place without many laments. A black letter enthusiast of much notoriety despondingly observes, that "The period is arrived, when our knowledge of the different species of birds is only obtained from the records of the naturalist; when the favourite *hawker* is almost a stranger to the hand; and the diversion, instead of taking precedence of hunting and angling, to which, from its antiquity, it seems entitled, is without sufficient advocates to obtain it even a third position among our domestic sports and pastimes." Had this antiquarian, however, lived but a few years longer, he would have witnessed strong symptoms of its revival. One more sanguine has remarked on the curious coincidence between these modern hawking drawings and the circumstance that many, even modern, leases in Surrey, Norfolk, Suffolk, and some other counties, are made with clauses retaining a right for the landlord and his friends and attendants to *hawk*, as well as to hunt, fish, and fowl, at his pleasure. We, however, suppose this to have been done in compliance with ancient usage, rather than from any decided expectation of the necessity of any such reservation as regards hawking; the revival of which we, however, think by no means unlikely.

2160. *The British practice of hawking in modern times* has been confined within narrow limits. Among its votaries may be mentioned the present Duke of Leeds, and the late Duke of St. Albans, who, as Hereditary Grand Falconer of England, used to fly his hawks upon the Brighton Downs, during his temporary residence at that fashionable watering-place. The locality was very favourable to the sport, and attracted a considerable concourse of spectators, though whether to look at the Duke or the hawks is uncertain. The Duke

of Leeds is a member of the Loo Hawking Club in Holland; and among other British hawkers of past and present times may be mentioned Lord Orford, Colonel Thornton, Sir John Sebright, Mr. Fleming of Barochan Tower, Renfrewshire, Sir John Maxwell, Bart., of Pollock, the late Hon. Charles Wortley, Mr. Newcombe, and Mr. Brodrick, one of the authors of the elegant work called *Falconry in the British Isles*, of which he is also the able illustrator.

2161. *The bibliography of hawking*, were we able to offer a complete list of the works written on it, would form a very proper wind-up to our hawking sketch; but the attempt even at the present moment would consume more of our time than we can spare. We may also add that the authentic sources of information are still fewer than the writers, as it was in early as well as in later times the fashion to borrow, re-dress, and exhibit as new, the information of times long past. Until the twelfth century we indeed find few written instructions on hawking, from which time however, notwithstanding it had been practised long before, it seems to have attracted the attention of the learned, some few of whom have written on it; and their manuscriptal notices serve to fill up the interval which occurred ere printing was happily invented. One of these early productions was that of Demetrius, who, joining piety, or otherwise fanaticism, with his sporting attachments, directs that every man should say his prayers before he goes out to hawk. Another treatise equally extraordinary on this subject, was that attributed to the Lady Juliana Berners, daughter of Richard Berners, of Berners Roding, and sister of Lord Berners, born at Roding in Essex, about the beginning of the fifteenth century. She has been celebrated by various authors as very learned; and doubtless had the best education that could be obtained in that age, as she was appointed prioress of Sopewell Nunnery, near St. Alban's, about 1460, or rather earlier. She was very beautiful, and fond of masculine exercises, such as hunting, hawking, &c. writing treatises on these subjects, as well as upon heraldry, which were so popular, that they were published in the very infancy of printing. Her treatise on hunting is written in rhyme, and affords strong evidence of the barbarity of that age. Her work on heraldry begins with the following piece of information:—"Of the offspring of the gentilman Jafeth (she certainly meant Shem), came Habraham, Moyses, Aron, and the profettyys; and also the kyngs of the right lyne of Mary, of whom that gentilman Jhesus was borne, very God and man; after his manhode kyngde of the land of Jude and of Jeus, gentilman of his modre Mary, prince of cote armure," &c. The treatise on hawking in this extraordinary work, we should think, from current circumstances, was the veritable production of this learned female, and was not, as supposed by Mr. Hazlewood, the compilation of a monk from the hawking MSS. deposited in the abbey; for we need not inform our readers, that in those times it was common to make those sacred places the sanctuary of learning as well as of religion.

2162. In 1595 the celebrated bookmaker, Gervase Markham, produced his *Gentleman's Academie*, which, as justly observed by Mr. Hazlewood, is little more than a garbling of *The Booke of St. Alban's*; nor is this gentleman wide of the mark when he asserts, that "Markham wrote better on horsemanship and agriculture than when he garbled."

2163. *De Arte Venandi cum Avibus*, which was printed at Augsburg in the year 1596, was also taken from an early MS. the author unknown. Frederic the Second appears to have been the means of bringing this work forward; and as he appears to have been himself a zealous falconer, it without doubt received some valuable additions from his hands.

2164. In 1575 Turberville's well known treatise on hawking appeared. This work was principally translated from *La Venerie et Falconrie*, by Jacques de Fouilloux, 1535, as Turberville's *Book of Hunting* was derived from Fouilloux's writings on that subject. But his more accredited work, known as *The Booke of Falconrie, or Hawking*, which appeared in 1611, proved by its contents that Turberville had indeed been a practical falconer, as will be evinced by some future extracts from the work.

2165. *The Country Contentments* of Markham, published in London, 1615, exhibited rather more originality than his former work. In this latter he is very warm in the praise of hawking, which he calls "a most princely and serious delight." It is Gervase who is very properly urgent in his directions as to the means of familiarising hawks to objects and noises, recommending, with much acuteness, that they be taken to the blacksmith's forge, there to hear the clattering of hammers, and to face the glitterings of fires; and from hence a similar recommendation has passed into other hawk-training instructions.

2166. Latham also in 1615, as we believe, presented the first part of his *Faulconry*, or *The Faulcon's Lure*, and in 1618 the second part appeared. There were also two reprints of it, one in 1633 and another in 1638. Mr. Hazlewood, to whom the public are indebted for many hawking notices, if we remember rightly, says nothing of the merits of this work; but from other sources we learn that it was long considered as the best *vademecum* then known. It will be seen that we have heretofore had occasion to quote it as an authority.

2167. Bert's approved *Treatise of Hawks and Hawking* appeared in 1619, and its author seems to have been a very zealot in the sport; indeed, much the greater part of his time appears to have been spent with his hawks. According to him, the qualifications necessary to constitute a complete falconer are, "An able body, a quick spirit, and, most of all, an

earnest love and delight thereunto; to such a man a hawk will quickly teach wisdom, but of him that wanteth wit she will make a fool, and of a dull spirit a true pack-horse." (*Penny Magazine* for 1834, p. 411.) He tells us also that such patience is required in reclaiming of hawks, that he has "heard of some who watched and kept their hawks awake seven nights and as many days, and yet would they be wild, rammish, and disorderly." He must himself have been very successful as a trainer, for he informs us he had sold a single goshawk and tereel of his own training for 100 merks.

2168. *In this year* (1678) the celebrated Ray published *A Summary of Falconry*, "collected from several authors." The descriptions of hawks were by Willoughby. Mr. Hazlewood very justly calls this a finished performance, presenting, as it does, a copious and correct catalogue of the terms of art used in this sport, together with full instructions for the management and reclaiming of hawks, and for the remedial treatment of their diseases.

2169. *The year 1686 ushered into notice Blome's Gentleman's Recreations*, among which the *Treatise on Hawking* stands conspicuous as a valuable summary of all that was known at that time. Blome in his introduction informs us, that he was principally indebted for the subject-matter of his hawking to Sir Ralph Dutton of Sherbourne, in Gloucestershire, and to George Russel of Abbotsbury Aston, in Buckinghamshire, Esq. Sergeant of his Majesty's Hawks, both experienced falconers. We have elsewhere expressed our opinion of the merits of Blome as a writer on falconry, and confirmed it by the frequency of our quotations from him. The fact that two such experienced falconers as those he notices, as having assisted him in forming the details of his work, stamps it with high value.

2170. *This year* (1773) gave birth to an extraordinary production, entitled, *A Treatise of Modern Faulconry*, by James Campbell, Esq. It is prefaced by "An Account from Authors not generally known, of the Practice of Faulconry in certain remote Times and Countries." Mr. Hazlewood's account of the birth, parentage, and ushering into life of this unique performance, is an amusing and somewhat romantic one. Campbell, having submitted what he had written on the practice of falconry to the inspection of the Rev. A. Gillies, was told that this was not sufficient, and that an historical account of hawking must be prefixed, which the rev. gentleman offered to supply. Mr. Hazlewood seems to hint that this offer was made with somewhat of an invidious intention; for instead of what was professed, the preface is evidently written "in ridicule of a work on the *Origin and Progress of Language*, then newly published;" and consequently, instead of a true history of the sport, there is prefixed a fabulous account of hawking by the Emperor Aram Vombanoberus with Trebezonian eagles, on the authority of MSS. in the Grand Sultan's library. This, as might be supposed, prevented any extensive circulation of the work, though its practical instructions were good. The most modern, and we believe we may also say, the most practical and useful work on the subject, is the one already mentioned (par. 2160.), *Falconry in the British Isles*, by Messrs. Salvin and Brodrick, both experienced hawkers, published by Van Voorst in 1855. Mr. Brodrick, we may observe, is a nephew of Mr. Selby, the celebrated ornithologist.

CHAP. V.

THE PRACTICE OF FALCONRY, OR HAWKING.



OLDEN HAWKING PARTY.

2171. *To treat satisfactorily of the practice of hawking*, we must first glance at the natural history of the various feathered agents employed in it. From viewing them in their wild state, we must proceed to inquire into the means employed in reclaiming them, and fitting them

for the practice of this once popular sport. Before, however, we proceed further with this subject, we deprecate the severity of criticism on our method of treating it. We are indeed, from the very nature of this sport of by-gone days, beset with many difficulties. The rust of time has thrown a veil over its olden practices, and in the records which should have described them, fable often takes the place of fact. A nomenclature, arbitrary and yet changeable, also tends further to bewilder us, and to frustrate our attempts at arranging and collecting the disgregated notices left by former writers into so correct or so clear a summary as we could have wished. We fear that these impediments have forced us into redundancy and repetition, and sometimes into statements apparently, but not really, contradictory to each other. When, however, the difficulties which surrounded us are candidly considered, we hope our humble efforts to rescue this aristocratical sport from oblivion may be received with favour, and, at least, that they may excite a more successful research by some more talented individual; in furtherance of which we conclude with Horace—

“ Si quid novisti rectius istis
Candidus imperti; si non, his utere mecum.”

Having thus stated some difficulties attendant on the subject, we must not forget to notice such aids of modern date as have offered themselves to our notice. Among these, the compendious *Vademecum* of Sir John Sebright stands foremost, of which it will be seen we have availed ourselves. Some foreign writers of repute also have lent us their aid towards making our compilation, as we would hope, somewhat instructive to the young falconer and interesting to sporting readers generally. To admirers of falconry we need offer no apology for entering so much at large into the history and individual examination of the several falcons and hawks usually employed therein, nor into the various manipulations necessary to train these stubborn subjects to perfect obedience.

2172. *We do not propose to limit our inquiries to the hawking practices of the present day*, nor to confine our descriptions to the falcons and hawks now engaged therein, although, if such were our intention, our task would be comparatively easy. We, on the contrary, propose to ourselves to enter into a much wider field of observation, and to depict the falconry of by-gone days, when it was the all-prevailing pursuit of persons of every rank; and to prove that in these times, to be a proficient in it was the strongest proof of high breeding, and the surest way to gain the envy of the men and the admiration of the women. In doing this a wide field of description must be entered on; nor must we shrink from attempting to present an account, both systematic and popular, of each of the numerous falcons, hawks, &c. that can be engaged therein. We may premise that we cannot but look with admiration at these aerial sportings of our forefathers, who, without the assistance of fire-arms, contrived nevertheless to bring down the winged soarers from heights which no modern projectiles could reach. Neither is our view confined to the amusement to be derived from detailing what has been done; but, regarding the ever varying caprices of man, and the signs of the times, we look forward to the period when this sport shall again revive; and, like the phoenix, arise with renewed splendour from its former ashes. We will not assert that such will be the case, but should it happen, which we consider to be very likely, then the knowledge of our sporting public, its enterprise, and the means possessed by it, will make a display more effective than that which has heretofore appeared. But neither can the descriptions we have to present on the olden practices, nor the instructions we would offer in aid of a revival of the sport, be appreciated without a sufficient knowledge of the hawking birds. It was by an acquaintance with their natures and properties that the ancients became such proficient in falconry, as to force every one of the rapacious birds into their service, and engage them readily to do their bidding. If in the dark ages these *feræ naturæ* were thus understood, how much more is it expected of us of the present day, to whom the volume of instruction is so widely open, that we should be intimately acquainted with the matters and properties of the various living forms around us! It is true that in the practice of falconry at the present time, the falcons and hawks which are employed are few in number: it might almost be said, that the list is confined to the gerfalcon, the peregrine or slight falcon, and the goshawk, a few falconers, and a few only, employing the sparrow-hawk, and still fewer the hobby or merlin. But, as already observed, the old hawking treatises notice not only all these but many others also; we should therefore be wanting in our description, not only of what has been done, but as well of what may be done again, if we did not present a picture, however short, both popular and systematic, of each individual of the important family of the rapacious birds: for our own opinion is, that there are few, if any of them, but what the industry or caprice of man has trained to falconry; and, consequently, what has been once done may be done again. When we make this general assertion, we wish to be understood, that we except the true vultures, of whose application to the purposes of the falconer we have but very indistinct notices. With this exception, we repeat, there is not one that has not really been trained to fly at some animal. Eagles of several kinds, we are told, have been employed against the roebuck, the antelope, the wolf, and other formidable antagonists; and even some vulturine types, if the accounts of travellers be correct, have been made to act the part of fish-hawks. We have premised thus much, that we may not bury our subject

within limits disgraceful to its real character; for we differ *in toto* from Linnæus, who, by way of note to his specific character of the *Falco Gentilis*, adds,—“*Ars capiendi falcones, columba, et lanio, instituendi, venandi gazellas, ardeas, aviculas, &c. propriis artificibus commissa, in luxuriam magnatum, ridenda etiam a stulto.*”

SECT. I. *Accipitres, or Birds of Prey generally.*

2173. *The rank of the Accipitres, or birds of prey*, places them at the head of every systematic catalogue. Linnæus divides them into four genera, as vultures, falcons, owls, and shrikes. Cuvier classes them as diurnal and nocturnal birds of prey; but which, with submission to this great authority, is less satisfactory: for, while some of the former prey by twilight, most of the latter may be seen doing the same long before dark. How few strollers in woods and groves are there but must have seen the common owl hawking for mice, &c. in the middle of a gloomy day. Bewick's comprehensive division of raptorial birds into falcons and owls is less objectionable, although by no means sufficiently illustrative. Dr. Fleming also, who professes to give British animals only, divides birds of prey into *Diurnæ* (hawks), and *Nocturnæ* (owls). We cannot pass by this opportunity of observing on the variable nomenclature used by naturalists. Here are instances of two authorities, much read and often quoted, who, though their meaning be precisely the same, make use of two different terms, which, however the initiated naturalist may understand them as synonymous, the uninitiated is very liable to stumble at. This is only one of many instances which we may have to quote of the difficulties with which the young falconer, and also the young naturalist, has to encounter, for want of a fixed nomenclature. At the present moment we have an instance of this incertitude, in the familiar and indiscriminate use of the terms falcon and hawk, which are so frequently employed the one for the other. It is not uncommon also, under this want of precision, when detailing the divisions of raptorial birds, to omit the shrikes (*Lanius* Linn.), which Linnæus himself introduces, and with propriety, as having many of the characters of the *Falconidæ*, and as being also of some importance as a hawking agent.

2174. “*The rapacious order of birds*,” Mr. Swainson observes, “is composed of only three families that are now in existence, whose prominent features are, perhaps, more decided than those of any other groups in ornithology: these are the vultures, the falcons, and the owls, which, it is unnecessary to say, are so strongly marked as to be familiar to every one. It has been customary with some systematists to divide this order into two groups, from the period of their feeding; the two former being diurnal, and the latter nocturnal: but this explains little. A much clearer, and certainly a more correct, idea will be formed of their true nature, by considering them with reference to their attributes, and their natural affinities.” (*Cabinet Cyclopadia*, vol. lxxiii. p. 280.)

2175. *The employment of birds of prey in falconry* forming the occasion of our treating of them, it will be convenient that we pursue the order of their description rather in a popular than a strictly systematic method. The diurnal, or day-preying birds we shall examine in the order of vultures, eagles, falcons, hawks, kites, buzzards, and shrikes. The nocturnal, or night-preying birds, we shall glance at as being not only an interesting family to every observer of nature, but as being immediately connected with the falconer's sport, as we shall show. A correct description, both systematic and popular, of each individual bird of prey, would be of great importance to such practical falconers as extend their views to the natural history of the objects they employ in their sportings; and who, not content with the mere possession of the birds, would further wish to know what were their ornithological characters, and what rank each held among his congeners. But unfortunately, even in the present advanced state of natural history, we are much in the dark with regard to their external characters generally, but more particularly with the distinctive markings of the plumage of these birds, in consequence of the great mutations which take place in that of each individual at different periods of its age. “Few birds,” says Mr. Griffith, “exhibit so many changes on the type in plumage as the diurnal *Accipitres*, from their birth to advanced age. Accordingly, we find it extremely difficult to determine the species, and even the sexes with precision, during the first two years, except among a few of them, in regard to size, in consequence of the similarity in their liveries, both of male and female. In the young, the colours are less pure, and the spots more prominent and numerous before the first moulting, and often before the second. After this last, the tints grow purer, the spots and streaks begin to change; and this takes place more and more in proportion as the bird grows older. In certain species these spots and streaks undergo so great a change in the course of time, that scarcely any vestige remains of them in the old males, which has often occasioned an erroneous distinction of species. Thus we find the vulture of Malta, passing from brown to white, becomes the vulture of Norway, and the little vulture of Buffon. The monachus ends by being the black vulture, quitting its grey and brown plumage to assume a very dark brown. The fulvous vulture, reddish in its youth, becomes successively grey, ashen, and of a uniform grey-white in advanced age.” (*An. King.* vol. vi. p. 157.)

2176. *A complete monograph even of the European raptorial birds*, therefore, it is not in our power to offer with any degree of confidence; and although we have waded through authorities innumerable, we have only found confusion worse confounded in endeavouring to identify the individual of one author by the characters attributed to it by another, although, probably, each drew a true portrait; but it was done at a different period of age. The annual changes which take place in the plumage of the accipitrine group through the term of their natural life, but particularly of those which occur between their first and seventh years, must be well understood before we can venture authoritatively on any individual description.

SUBJECT. 1. *The Vulture.*

2177. *The vultures* (*Vultur* Linn.), as the first genus of the order *Accipitres* of Linnæus, will occupy little of our attention. These gigantic birds are essentially extra European,

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THE VULTURE.

two species only being found in Europe, *V. fulvus* and *V. cinereus*, little known as hawks, one sub-variety only having been employed, we believe, on some particular occasions, as a fish-hawk. The Cuvierian characters of the vulture are, "eyes close to the head, the tarsi reticulated, that is, covered with small scales; the beak long, bent only at the end; and a part, more or less, of the head, or even the neck, denuded of feathers (fig. 329.). The power of the talons of vultures does not correspond with their size; and indeed they appear to prefer to make use of the beak, and their wings are so long, that they hold them half extended when they walk. In disposition they are cowardly birds, and live more commonly on dead carcases than on living prey. After eating, their crop forms a large protuberance, under the *furca*; a fetid secretion runs from the nose, and they are reduced, during the digesting of

a meal, almost to a state of stupidity." It has been too common to confound the eagle family with the vultures, but the naked state of the head and neck of the latter would alone sufficiently distinguish them. The eyes of the vulture are on a level with the surface of the head, while those of the eagle are retracted within the orbits: the claws of the eagle, likewise, are almost semicircular; whereas in the vulture they are irregularly flattened. In the port, also, of the two tribes, it is agreed by all naturalists and travellers, that a marked difference is observable; that of the vulture on the ground presenting nothing of the erect and noble bearing of the eagle. Deficient in individual enterprise, vultures live gregariously for protection, and only attack living animals in numbers; while all their habits partake of one character, that of a disgusting grossness. In feeding their young, they do not carry the food in their bills or talons, but disgorge it piecemeal from their crops into the mouths of the young ones. Although the condor tribe all attain a great size, so as to stand upwards of three feet in height, and sometimes to reach to eleven in the *envergure*, yet few, if any, extend beyond these dimensions. Mythological fiction and the gullibility of travellers, it is true, have invested the condor with a monstrosity of size and power equal to the conveying of an elephant into the air. Such was the fabled eagle-roc of Marco Polo, said to inhabit the island south of Madagascar, but which is now known to exist only in the imagination of the narrator. Mr. Swainson observes, that "The filthiness of the food of vultures, which is principally carrion, imparts to their whole body a fetid odour, which nature has rendered a means of defence; for, if seized during the torpid inactivity which succeeds their meals, they immediately disgorge the nauseous contents of their crop over the luckless captor, who is thus, by a sudden impulse of loathing, obliged to relinquish his hold. But that those parts of the bird which come in contact with its offensive food should not be soiled and matted together, the whole of the head (and frequently a great part of the neck) is entirely destitute of feathers; while those on the rest of the body have a certain elasticity and glossiness, which enables the bird, by a few sudden shakes, to cleanse itself at once from any fragments that remain upon its plumage. Can we fail to admire the provident care of nature in this instance of vulturine speciality? The vultures are, indeed, the great scavengers of nature in hot latitudes, where putrefaction is extremely rapid, and most injurious to health; and the disposition of their numbers appears to be regulated by the number of deaths which are likely to occur around them, some spots being more pestilential than others, and some also more likely to abound with casualties than others. We are told that they are sparingly scattered over the south of Europe. In Egypt they are said to be more numerous; and that, in tropical America, although the species are fewer, the individuals are much more plentiful. No sooner is an animal dead, than its carcass is surrounded by numbers of these birds, who suddenly appear coming from all quarters, in situations where not one had just before been seen." (See Mr. Swainson's *Nat. Hist. of Birds*, vol. i. p. 289.)

SUBJECT. 2. *The Eagle.*

2178. *The eagle (Aquila)*, Colonel Montague says, differs but little from the true falcon except in size (*fig.* 330.). We think, however, this eminent naturalist, when he thus wrote,

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GOLDEN EAGLE.

must have overlooked one very distinctive character which separates these birds. We allude to the form and markings of the beak, which are in falcons more distinctly fitted for rapacity than the same organ in the eagle, as will be more fully illustrated hereafter. In the mean time we beg to quote what Mr. Swainson says on the subject:—"The upper mandible of the bill of the eagle, as seen in the figure, presents little or no indication, either of the acute tooth of the falcons, or the prominent but rounder lobe of the hawks." We may add to this, that it is altogether longer, and does not incurvate until it has extended a considerable distance from the base; and, as observed by Mr. Bennett, "We can distinguish the eagle from the falcon by the greater comparative length of its quill feathers, the fourth being almost uniformly the most elongated of the series, and the first being extremely short; and by the equal development of those which compose the tail. Thus the actual existence of the eagles, as a division from among the falcons of Linnaeus, which has been by some re-

garded as a mere conventional assumption, grafted on the popular nomenclature, is established upon sound zoological principles." Nevertheless, we cannot but feel concerned when we are forced, in accordance with systematic classification, to place this majestic bird among the ignobles. The ancients, however, paid the eagle just homage, and consecrated him to Jupiter. He was known by them as "the celestial bird, the messenger of the heathen deities, and to him were committed the thunderbolts of the gods."

2179. *Eagles, beyond all doubt, have been trained to the pursuit of game after the manner of falcons*, as proved by our notices of the *Expeditions and Falconry of the Khans of Tartary*, p. 18. 640. We also believe that they are so employed to the present day in Persia, and in some parts of India; but a certain intractability in their natures, not to be easily overcome, has prevented their being so used by Europeans. We are not apprised of the exact methods pursued, but are told that the Kirghees, who inhabit the north-eastern shores of the Caspian Sea, hunt deer and other large animals with eagles at the present time. Hernandez likewise informs us, that the harpy eagle, in particular, was very commonly trained to hawk, and that as readily as any other of the accipitrine tribe. These varied notices, therefore, entirely contradict the dictum of the St. Alban's sporting abbe, who observed that "the eagle, the vulture, and the merloun, be not enlured nor reclaimed, because they be too ponderous to the *perch portatif*, i. e. being too heavy to be carried on the fist. Had this renowned lady been informed of the tractability of the hunting leopard, which springs on the back of the horse behind the rider, and so accompanies him to the hunting field to assist in securing deer, she would not have been thus sceptical on the necessity of the *perch portatif* to insure the voluntary services of the eagle.

2180. *The eagle is characterized by having the tarsi feathered to the base*, and by wings as long as the tail. The tarsi of some of the genus *Aquila*, however, are not thus extensively covered, although the wing feathers of most, if not of all the group reach to the extremity of the tail, thus giving to them one of the leading zoological characters of nobility, although, from the formation of the beak, such is usually denied to them by the practical falconer, as well as the critical naturalist. The flight of the eagle is, however, lofty and rapid, his strength and ferocity are great, and his temper sullen and intractable. The zoological character of the eagle will be further noticed in our description of the bills of falcons and hawks. The eagle is strictly carnivorous, and the structure of his assimilating organs precludes the use of any other food; consequently he does not violate nature by his predacious

habits. From the capacity of the crop, being to that of the ventricle as thirty-eight to three, Spallanzani was led to a physiological assumption, that the eagle was capable of enduring without manifest injury a fast that would destroy any other known bird. This has been proved to be the case, as it is on record that one has lived without any nourishment for forty days, at the expiration of which time it was killed. The eagle can also abstain from fluid nourishment; it is, however, an error to suppose he does not drink at all, for he has been seen to do it; but he can refrain from liquids in the same ratio with his abstinence from solid food.

2181. *The golden eagle (Aquila Chrysaetos, Savigny)* is thus characterised by Dr. Flein- ing:—"Tarsi feathered to the toes; the last joints of all the toes furnished with only three scales; inhabits mountainous districts; breeds in Orkney; length thirty-six, breadth eighty-eight inches; weight about twelve pounds; bill dusky; irides brown; cere and feet yellow; the acuminate feathers on the head and neck bright rust colour, the rest of the plumage dusky brown; the feathers on the thighs and legs of a light colour; tail rounded, longer than the wings, of a deep grey, clouded with dark brown, a band of the latter occurring at the extremity; breeds in high precipices; eggs two or three, dusky white, with reddish blotches. The plumage of the young is darker, and the basal half of the tail is white. In this state it is the *Chrysaetos cauda annulo albo cincta* of Will., p. 28.; *Falco fulvus* of Linn., *Syst. Nat.* i. 125.; or the ringtail eagle or black eagle of Penn., *Brit. Zool.* i. 165. In the opinion of some the ringtail is considered as a distinct species; but the facts stated by Temminck and Selby demonstrate its connection with the golden eagle. (See *Wern. Mem.* vol. iv. pp. 428. 434.) Preys on sheep and deer." (P. 52.) Mr. Bennett observes, of the golden eagle particularly, and the individuals of the genus generally, that "they change their plumage to such an extent as they advance in age, that their various stages of growth have been repeatedly described as distinct species. Thus the golden eagle appears in the compilations of Gmelin, and other naturalists of the same stamp, under no fewer than four, or even five, different denominations." (P. 147.) This noble bird measures three feet in length, and the envergue of its wings reaches to the extent of seven feet in the adult state. Mr. Macgillivray, whose authority on these *Rapaces* we should consider as indisputable, describes the proportions of the male bird as follows:—"Length, two feet nine inches; extent of wings, six feet; bill along the back, two inches and three-quarters, to the tip of lower mandible two and a half; tarsus, three and three-quarters; middle toe and claw, four and a quarter; hind claw, two and a quarter." Of the female, as follows:—"Length, three feet; extent of wings, seven; bill, two inches seven-eighths, one and a quarter deep before the cere; tarsus, three and three-quarters; middle toe and claw, four and a quarter; hind claw, two and a quarter; length of nostril, three-eighths." (P. 91.)

2182. *The geographical distribution of golden eagles is very extensive*: they are found on all the mountain chains of Europe, in Asia Minor, Tartary, and Siberia; they are seen in the northern parts of Africa and America; nor are they unfrequent in Europe, particularly in Russia, Norway, Sweden, as well as the Pyrenees and the Alps. Mr. Pennant says, "it is frequent in Scotland;" and adds, "that it is very destructive to deer, which it will seize between the horns, and, by incessantly beating it with its wings, soon makes a prey of the harassed animal; that it builds in cliffs of rocks near the deer forests, and makes great havoc not only amongst them, but also the white hares and ptarmigans." Willoughby gives an account "of the nest of this species, found in the woodlands near the river Derwent, in the Peak of Derbyshire." He says "it was made of large sticks, lined with two layers of rushes, between which was one of heath; that in it was one young and an addled egg, and by them a lamb, a hare, and three heath poults." Colonel Montague observes, however, that the golden eagle "does not appear to be so plentiful, even in North Britain, as the sea-eagle, and probably is confined to the Highlands of Scotland, where it usually breeds in the most inaccessible parts of the mountainous cliffs; sometimes on that stupendous mountain, so well known to all the northern tourists, Ben Lomond. Upon the summit of that mountain an eagle's egg was found amongst the rocks, without any nest, supposed to belong to this species, and which must have been prematurely dropped. As we were sporting in the neighbourhood of Ben Lomond, on the summit of the lesser mountains that form its base, a grouse (*Tetrao Scoticus*) was wounded, and flew with difficulty eighty or a hundred paces. An eagle, apparently of this species, perceiving the laborious flight of the grouse, descended with rapid wing from the adjacent lofty cliffs before our guns were reloaded, and, in defiance of the shouts made to deter him, carried off his prey. In another part of the western Highlands of Scotland, we had an opportunity of witnessing the powers of the flight of this bird in pursuit of its quarry. An old blackcock (*Tetrao tetrix*) was sprung, and was instantly pursued by the eagle (who must have been on a neighbouring rock unperceived) across the glen, the breadth of which was at least two miles. The eagle made several unsuccessful pounces, but as there was no cover and the bird large, it probably fell a victim in the end." (*Ornithological Dictionary*, p. 209.) Mr. Macgillivray says it is often seen in the maritime cliffs of the Hebrides, but that it appears to prefer inland precipices for breeding on, as the central ranges of the Grampians, the rocky mountains of the western and northern

parts of the middle division of Scotland, the Hebrides, the Orkney, and Shetland islands.

2183. "*The nest of the golden eagle*," Mr. Bennett observes, "forms a solid platform, of several feet in width, built of sticks and branches of trees, interlaced with smaller twigs, and covered with layers of reeds or heath. The female seldom lays more than two or three eggs, of a dirty white, spotted with red. Their food consists almost solely of living victims; and foxes, lambs, fawns, and birds of various kinds, form their most usual prey; indeed, it has been said that they sometimes carry off infants; and Anderson asserts that in Iceland they have been known even to seize upon children of four or five years old: but there seems to be great exaggeration, or rather much of positive invention, in all the stories of this description with which we have met. They sometimes attain a very great age; Klein mentions one that died at Vienna in 1719, after having been confined there for upwards of a century." (*Zoological Gardens*, vol. ii. p. 149.) Mr. Macgillivray says it lays two eggs of a yellowish tint, with pale purplish dots; the young are fledged about the end of July, and soon after coming abroad are forced from the parents to shift for themselves. Thomson seems to have been aware of this early separation of the parents from their young:—

"High from the summit of a craggy cliff,
Hung o'er the deep, such as amazing frowns
On utmost Thilda's shore, whose lonely race
Resign the setting sun to Indian worlds,
The royal eagle draws his vigorous young,
Strong-pounced, and ardent with paternal fire;
Now fit to raise a kingdom of their own,
He drives them from his fort, the tow'ring seat
For ages of his empire; which in peace
Unstained he holds, while many a league to sea
He wings his course, and preys in distant isles."

Thomson's Seasons.

2184. *Intractability of temper is not constant in the great eagle.* The French journal for the year 1807 gave the following interesting account of an eagle of this kind, then in the menagerie of the Garden of Plants in Paris:—"There has been for some time in the Garden of Plants an eagle, which her majesty the empress sent thither, and which is as much distinguished by his beauty as by a silver ring which he carries in one of his talons. It was originally domesticated with an English gamecock, which has at last served him for food; it is not known, however, whether the death of the gamecock was produced by his own fierceness, by some movement of anger, or merely by the hunger of the eagle. The following is the history of this eagle since he lost his liberty:—He was taken in the forest of Fontainebleau, in a trap set for foxes, the spring of which broke his claw; his cure was tedious, and attended by a painful operation, which was borne by the eagle with a patience not often exceeded in man. During the operation his head only was at liberty, and of this he did not avail himself to oppose the dressing of the wound, from which several splinters were taken; nor did he attempt to disturb the apparatus which the fracture required. Swathed in a napkin, and laid on one side, he has passed the entire night upon straw without the least motion. The next day, when all the bandages were unwrapped, he lodged himself upon a screen, where he remained twelve entire hours without once resting on his unsound foot. During all this time he made no attempt to escape, though the windows were open. Yet he rejected all nourishment until the thirteenth day of his captivity, when he tried his appetite upon a rabbit which had been given to him. He seized it with his uninjured claw, and killed it with a stroke of his beak, between the head and the first vertebra of the neck. After having devoured it he resumed his usual place upon the screen, from whence he stirred no more until the twenty-first day after his accident. Then he began to try the wounded limb; and without in the least deranging the ligature by which it was bound, he has regained the use of it by moderate and reasonable exercise. This interesting creature has passed three months in the room of the servant who attended him. As soon as the fire was lighted he came up to it, and suffered himself to be carressed; at bedtime he mounted his screen, as close as possible to the attendant's bed, but removed to the opposite extremity as soon as the lamp went out. Confidence in his own powers appeared to exempt him from any kind of distrust. It is impossible to show more resignation, more courage, and one might almost be tempted to say, more reason, than was exhibited by this eagle during the long continuance of his illness. He is of the most beautiful kind, and does not appear to experience the least weakness in consequence of the accident which robbed him of his liberty." (*Penny Magazine* for 1835.) The general character of this bird, however, is not marked with much tractability; on the contrary, Mr. Macgillivray says, it is more ferocious in captivity than the sea-eagle, and that it cannot be trusted even by those who supply it with food. Mr. Selby also, who had two of them in his possession for some years, observed no diminution of ferocity during the time. The golden eagle appears gifted with the same capacity of abstinence which marks the other members of the genus *Aquila*. The following anecdotes, extracted from Mr. Macgillivray's interesting work on rapacious birds lately published, are too much to our purpose to omit, emanating as they do from so respectable and accredited a source; neither can we proceed without strongly

recommending the work to the diligent perusal of both the naturalist and sportsman. Mr. Macgillivray says, "For the following information respecting eagles, I am indebted to Mr. Alexander G. Macgillivray, who had the kindness to procure it from his brother Mr. Robert Macgillivray, a native of Sutherland, in which district these birds are still pretty numerous. Both species occur there; and as they are not distinguished by the writer, his observations must be considered as applying to the eagles of Sutherland generally:—The little sparrow-hawk attacks the eagle fearlessly, and, by its superior agility, eludes the grasp of its doughty enemy. Mr. Sutherland saw an eagle obliged to drop a moor-fowl from the constant attacks of a sparrow-hawk. While John M'Kay was in Kildonan, an eagle bore away a dog belonging to William Armstrong, which was three years old, and about the size of a hare. Eagles carry off hares very frequently, and sit on the top of some lofty eminence to devour them. A Kildonan eagle pounced upon a cat, and bore it away to her nest. The injuries inflicted by the clutch of the eagle, and the unusual mode of travelling, so confounded poor puss, that she exhibited no signs of life, and was accordingly left for dead by the eagle with her young ones. But soon after the eagle had left her nest the cat revived, and having killed the eaglets, made a hearty meal of one of them. She then made a hurried retreat, and effected her escape without further injury. This anecdote is well authenticated. Mr. Sutherland related another anecdote to me, which he affirms is perfectly true. Two sons of a man of the name of Murray, in Achnaluachrich, having robbed an eagle's nest, were retreating with the young, when one of the parent birds having returned, made a most determined attack upon them. They said they had never been in such peril; for the eagle dipped her wing in a burn that ran by, and then in sand, and sweeping repeatedly by them, struck at them with her wing. Although each had a stick, it was with great difficulty that they at length effected their escape, when almost ready to sink under fatigue. John M'Kay says, that when an eagle approaches a wood, you may sometimes see thirty or forty black grouse rise, while she is yet at the distance of a quarter of a mile, and scamper off in great haste. He also states, that the stench from the nest is quite intolerable, owing to the quantity of putrid matter about it; and that he saw six red grouse at once, with a great many bones, in the nest of a large hawk." (P. 106.)

2185. *The great sea-eagle (Haliaetus albicilla* Willoughby), also known as the erne, or white-tailed sea-eagle, &c. is characterised by Dr. Fleming as having "Tarsi half feathered and plated; tail not longer than the wings, inferior in size to the golden eagles; bill whitish; irides light brown; cere and feet yellowish white; plumage dusky brown, with an ashen tinge. Tail wholly white. Breeds in rocks; eggs two, of a white colour, with a few reddish spots. In the young the plumage is deep brown, with the margins of the feathers lighter coloured; bill and iris black; tail with the basal half whitish grey, with irregular brown spots on the outer webs, the extremity brown. In this last state it is the sea-eagle of Pennant (*Brit. Zool.* i. 167.), the *Haliaetus* and *Pygargus* of Willoughby, and the *Vultur albicilla* and *F. ossifragus* of Linnaeus; all which belong to this species, and seem to be in intermediate stages of plumage. Feeds on fish, aquatic birds, and land animals." (*British Animals*, p. 53.) The proportions of the male, as given by Mr. Macgillivray, are, "Length three feet; extent of wings six feet six inches; bill three inches and a half along the back, two and a half to the tip of the lower mandible, one and a half in depth; tarsus four, middle toe and claw five and two-tenths. Female: length three feet two inches; extent of wings seven feet; bill three inches ten-eighths long, one and a half in depth; tarsus four, middle toe and claw five and a quarter." (*Rapacious Birds*, p. 55.) This eagle is found throughout Europe and also in northern Asia. "It sometimes builds its nest," Mr. Bennett informs us, "in the clefts of rocks, but more frequently on the summit of some lofty tree. The female lays two eggs, about the same size and shape as those of a goose. The young are fed with fish or flesh until they are able to quit the nest, when they sally forth with their parents in quest of their own prey, and speedily assume an independent mode of life." (*Zoological Gardens*, p. 36.) This bird, also, is subject to great mutations by age. Colonel Montague gives a very minute description of one which was killed by Sir Robert Littleton's gamekeeper in Shropshire, who, being out shooting, saw two large birds feeding on the carcass of a sheep which appeared recently killed. Having nothing but small snipe-shot with him he turned back, intending to go home for larger. The eagles then followed him, and frequently came so very near that he concluded they meant either to attack him or his dogs. Suddenly losing sight of one, he judged it was very near him behind, and being somewhat alarmed he turned round and shot at it in a hurry; after which the bird flew some hundred yards, and dropped. On his approach it was vomiting blood; and he killed it after a struggle of half an hour. He adds, that it was the largest of the two. The other eagle continued in the neighbourhood some time after, and roosted in the high trees of a wood belonging to Sir Robert Littleton. To this account Colonel Montague further adds, that "another of this species was shot in Epping Forest a few weeks before. Others have been frequently killed in the New Forest; and we are informed that scarce a year passes without one being seen in that part of the country; two of which we have seen nailed up in the hall of the lodge at Lyndhurst." By this it would appear that this variety of eagle is more common among us than

we imagine. The colonel also received two young ones of this species alive, which had been taken on a mountainous precipice or craggy cliff, called Slieve Donald, impending over the sea, in the county of Down. The donor informed the colonel, that "two men, covered with sackcloth and armed, were lowered by ropes to the eyry, which, with considerable difficulty, they robbed of two young, leaving only one addled egg behind, the old eagles being so furious as to create serious alarm; neither the nest nor colour of the egg were noticed; some fragments of flesh were in the nest." In Scotland it is sufficiently common, and in the Orkneys still more so. Latham says that Dr. Heysham informed him of a nest of one of this species, near Keswick in Cumberland, in which was found a trout weighing about twelve pounds; and between the upper and lower lakes of Killarney is a rock, called the Eagle's Nest, originating from the circumstance of its breeding there annually. The bird mentioned by Dr. Heysham was obtained alive, and had been in his possession about ten years when he communicated the circumstance to Latham. We would refer the reader who may feel an interest in this bird to *Montague's Ornithological Dictionary*, p. 150.; which, by its ample details, will yield him abundant information regarding it. It is without doubt this eagle, now identified with the cinereous eagle, that Sir Humphrey Davy, in his *Salmonia*, has so well described.

2186. *A method of taking these eagles is thus stated to be practised in Sutherland*: — "A miniature house, at least the wall part of it, is built on ground frequented by the eagle, and an opening left at the foot of the wall sufficient for the egress of the bird. To the outside of this opening a bit of strong skainy (cord) is fixed, with a noose formed on one end, and the other end returning through the noose. After all this operation is finished, a piece of carrion is thrown into the house, which the eagle finds out and perches upon. It eats voraciously; and when it is fully satiated, it never thinks of taking its flight immediately upwards, unless disturbed, provided it can find an easier way to get out of the house; for it appears that it is not easy for it to begin its flight but in an oblique direction; consequently it walks deliberately out at the opening left for it, and the skainy cord being fitly contrived and placed for the purpose, catches hold of and fairly strangles it." (*Statist. Account*, vol. xxi. p. 221.)

2187. *To keep down the ravages of the predacious birds, and confine them within certain limits, nature has wisely allowed of antipathies in other birds to these ravagers, which tend to keep their destructive habits somewhat in check.* Richard Drosier, Esq. in a communication made to Mr. Loudon in his *Magazine of Natural History*, vol. iii. p. 322., informs us, — "The skua-gull, called by the natives *buncie*, is held and cherished by them with the greatest veneration and kindness; and nothing hurts their feelings more than to see the death of their favourite bird. I was particularly requested, upon my first arrival, by two or three elderly natives, to spare this bird; as to the skua were almost entirely trusted the care and protection of their lambs during the summer months, that are always allowed to wander unrestrained over the island. These birds possess an inveterate dislike against the eagle and raven; for no sooner does the broad and rounded wing of the eagle appear emerging from his rocky habitation amid the cliffs, than the skua descends upon him from the tops of the mountains, in bodies of three or four, and never fails to force the eagle to a precipitate retreat. The natives always reward his services by casting from their boats the refuse portion of the fresh caught fish, which he seizes with greedy avidity, snatching it almost from the hands of the fisherman. I was particularly amused one evening, when standing at the foot of the loftiest hill (called by the natives *Snuge*), with the following circumstance: — An eagle was returning to his eyry, situated in the face of the western crags, in appearance perfectly unconscious of approaching so near to his inveterate foe, as, in general, the eagle returns to the rocks from the sea, without ever crossing the smallest portion of the island. This time, however, he was making a short cut of it, by crossing an angle of the land. Not a bird was discernible; a solitary skua might, indeed, be occasionally seen, wheeling his circling flight around the summit of the mountain, which was already assuming its misty mantle. As I was intently observing the majestic flight of the eagle, on a sudden he altered his direction, and descended hurriedly, as if in the act of pouncing: in a moment five or six of the skua passed over my head with an astonishing rapidity; their wings partly closed and perfectly steady, without the slightest waver or irregularity. They appeared, when cleaving the air, like small fragments of broken rock, torn and tossed by a hurricane from the summit of a towering cliff, until, losing the power that supported them, they fell prone to the sea beneath. The gulls soon came up with him, as their descent was very rapid, and a desperate engagement ensued. The short bark of the eagle was clearly discernible above the scarcely distinguished cry of the skua, who never ventured to attack his enemy in front; but, taking a short circle around him, until his head and tail were in a direct line, the gull made a desperate sweep or stoop, and striking the back, he darted up again almost perpendicularly; when, falling into the rear, he resumed his cowardly attack. Three or four of these birds, thus passing in quick succession, invariably succeeded in harassing the eagle most unmercifully. If, however, he turns his head previously to the bird's striking, the gull quickly ascends, without touching him. This engagement continued some time, the eagle wheeling and turning as quickly as his ponderous wings would allow; until I lost the combatants in

the rocks. As soon as this is the case, the gulls leave, and quietly return to the mountain. Snuge being the highest mountain is usually chosen by the skua-gull as his retreat in the breeding season. The female, which is somewhat smaller than the male, makes her nest in the long coarse herbage of the mountain, and generally lays four eggs, of a dirty greenish colour, very faintly and obscurely blotched with spots of a brownish cast, principally at the larger end. When the young are hatched the old ones are then very savage, and will unhesitatingly strike either man or beast that attempts to molest them by approaching too near to their nests. Their mode of attack is always from behind, never by any chance in front: probably the reason for this caution is to avoid any blow which they would naturally receive if their intentions were discovered, as they would be, if the birds approached in any direction but behind. It is surprising how dexterously they will avoid an attempt to strike them, by a rapid and almost perpendicular ascent, even if they have advanced within a foot of your shoulders. To avoid them, it merely requires to be on your guard, and when a bird stoops, to face him immediately, or you are most likely to suffer for your neglect by a good smart blow on the shoulders."

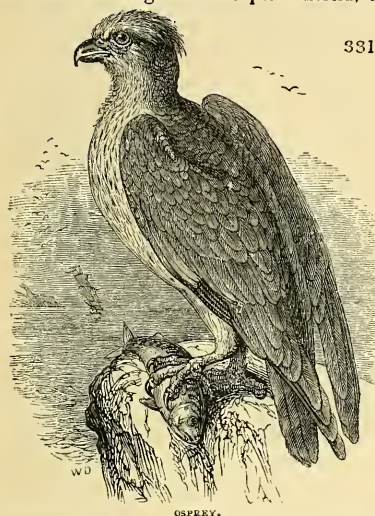
2188. *The fishing eagle (Pandion Hahatus Savigny)*, osprey or fishing hawk (*fig. 331. p. 659.*), is thus characterised by Dr. Fleming:—"Wings longer than the tail; tarsi short, thick, and reticulated; length twenty-three, breadth sixty-four inches; weight sixty-two ounces; bill black, cere and legs blue, irides yellow; the plumage above is brown; the feathers on the head edged with white; hind head white, below it is white. Beneath the eye is a band of brown, reaching almost to the shoulder. Quills about twenty-eight; those from the seventeenth to the base, pointed; inner webs of the four first abbreviated at the extremity; tail of twelve equal feathers, the two middle ones dusky, the others barred with brown and white; tibiae long; soles of the feet very rough. Montague states (*Sup. Orn. Dict.*) that, 'On the inner side of the extremity of the outer toe are two or three spines.' Breeds on the ground, among reeds, or on trees; eggs three or four, white and elliptical; young with the feathers on the breast yellow, with dusky or brown spots; feeds on fish chiefly, darting upon them in the water." (*British Animals*, p. 51.) Mr. Macgillivray observes on it as being "remarkable among the British birds of prey for the peculiar adaptation for fishing, evinced by the form of its claws, the prominence of the thick conical scales of the lower surface of its toes, the shortness of the plumage of its legs, and the great length of its wings." The proportions of the male he gives—"Length twenty-three inches, extent of wings sixty; bill one and three-quarters along the back, one and three-quarters to the tip of the lower mandible; tarsus two and one-eighth, its claw one and a half; outer toe one and a quarter, its claw one and three-quarters; third toe one and two-twelfths, its claw one and four-twelfths; inner toe one and a quarter, its claw one and a half; wing, from flexure, eighteen; tail eight." In this bird, as in the hawks, the male is considerably smaller than the female, whose measurements are as follow:—"Length twenty-five inches, extent of wings sixty-eight; bill one and three-quarters; lower mandible one and a half; tarsus two and a quarter; hind toe one, its claw one and three-quarters; second toe one and two-twelfths, its claw one and a half; third toe one and three-quarters, its claw one and seven-twelfths; outer toe one and a quarter, its claw one and a half; wing, from flexure, twenty; tail eight and a half." (P. 115.)

2189. *By many naturalists this bird is denied a place among the eagles*, but is classed with the bald buzzards; so called, it is said, from the light colour of the feathers at the back of the head representing, or being mistaken for, a state of baldness of the part. Mr. Macgillivray says, that the tarsus or legs are feathered in front about one-fourth of their length. The wings, which are very long, have thirty quills, whereas the white-tailed eagle and the golden eagle have only twenty-five. The tertiaries, to the number of ten, are as largely developed, and as strong as the secondaries. The first three quills are deeply notched internally towards the end. It is however remarkable, that the wings, when closed, do not extend, our informant observes, more than an inch and a half beyond the tail. "This species," it is remarked by Colonel Montague, "is now rarely met with in England, and more frequently in Devonshire than elsewhere; it resides chiefly near water, especially large rivers and lakes. Its principal food is fish, which it catches with great dexterity, by pouncing on them with vast rapidity, and carrying them off in its talons. We are informed that it is frequently seen about the lake of Killarney in Ireland; and at particular seasons, no doubt, breeds there. It is said to make its nest generally on the ground by the side of water, composed of flags and rushes; but we once saw the nest of this bird on the top of a chimney of a ruin, in an island on Loch Lomond, in Scotland; it was large and flat, formed of sticks laid across, and resting on the sides of the chimney, lined with flags. It is said to lay three or four white eggs, of an elliptical form, rather less than those of a hen. Many of the ancient writers have described this bird to have one foot subpalmed, a circumstance that has never occurred in any animal, each side always corresponding in size and shape. The osprey can neither swim nor dive, but takes its prey as they approach the surface of the water." (P. 347.)

2190. *The preying of the osprey is a very interesting sight.* When one of these birds leaves its nest to prey for its young, the sea, or some vast lake, is the usual course of his wandering. Wheeling around in airy circles, he views all beneath with minute attention, particularly he meditates the watery world below, over which he suddenly appears as a fixture, supported only by a rapid motion of his wings. Ere long he is seen to dart down with surprising velocity, and soon he emerges from the water, bearing a large fish (*fig. 331.*) in his talons, with which he speeds him away to his mate and her young, where his visit is without doubt greeted by the home party

2191. *The sea-eagles, as the ospreys are called, form a widely diffused group, for they are met with throughout Europe, America, and Northern Asia.* In so wide a geographical

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distribution, it is but natural to expect that the individuals will present considerable variations, particularly in their plumage. They certainly recede from the character of the eagles, but evidently approximate the vultures, as well in their external characters as in their habits. Of the former we have an additional proof to those we have stated, by the thin clothing of light coloured feathers on the head and neck, which, as they advance in age, particularly in the South American groups, amounts almost to baldness—at least it leaves only a slight covering of thin downy feathers. In the choice of their food, “the sea-eagles,” Mr. Bennett observes, “are far less scrupulous than their brethren of the land. Inhabiting most commonly the sea-coasts, or the banks of the large rivers and inlets, they make their prey chiefly of fishes and aquatic birds. These they usually carry off to devour at their leisure, either on the rocks or in their nests. But occasionally, when all other resources fail, they fix themselves upon the dead carcasses of animals which are thrown upon the shore, and their manner of feeding under such circumstances closely resembles the disgusting voracity of the vultures. For hours, and sometimes for days together, they remain stationary upon the putrid carrion, and quit it only when it no longer affords the means of satiating the cravings of their appetite.” (*Zoological Gardens*, p. 35.) Thus we are furnished with a new proof, not only that connecting links of similitude unite all the living forms around us, but likewise that the slight deviations which we observe between each link are so economically framed, that the very departure from the specialities of the last link are those which will least harmonise with the wants of the next. Mr. Macgillivray, under similar impressions, thus notices the habits of these birds; and his observations are particularly deserving attention, as applying to the structure and functions of the wings of the raptorial birds generally:—“In the form of the osprey is presented to our contemplation an example of the adaptation of means to ends, which we can in some measure comprehend. That bird lives entirely on fish, marine and fluviatile, or lacustrine, and its food must be fresh; at least it does not appear to meddle with fish that have been cast ashore, or left dead in the water. Its prey is slippery, and therefore its claws are long and much curved; its toes nearly of equal length, and capable of being applied in the most effectual manner, in pairs, two and two opposite each other. It must also possess considerable power, and therefore its legs are strong and muscular; and to prevent its being inextricably entangled, the claws are smooth and rounded, so that they can, if necessary, be readily withdrawn. The animals on which it feeds live in the water, ordinarily beyond its reach, coming occasionally to the surface. The bird, therefore, has a comparatively slender form, with very long wings, to enable it to remain without fatigue sailing or hovering over the water, until an opportunity of pouncing occurs.” Imagination already paints the act, and that the moment has arrived when she attempts the violent seizure. It is done! How she disturbs the waters by the violence of her pounce! the liquid element even seems to resent the shock by the ebullition it has occasioned, and the spray it has thrown up! She has however struck correctly, and has secured her prey, apparently a very large fish. But may not the united resistances of the fish and the water have injured her? No! provident Nature has provided against this danger to the bird; and to prevent its plumage being injured by its sudden immersion in the water, the feathers of the lower surface are

rather more compact, and considerably shorter, than in eagles and most other birds of the family; and those of the leg are short all round, while most other species have a large tuft of soft feathers on the outer side of the tibia. On the upper parts, again, the plumage is not more compact than in other species, there being no purpose to be answered by such an arrangement. The structure of the wing is peculiarly worthy of study. Hawks having long wings, are commonly supposed to have a more rapid flight than those with short wings; but this is not always the case, for the flight of the short-winged sparrowhawk is certainly as rapid as that of the longer winged kestrel. The osprey has very long wings, yet its flight is not so rapid as that of the falcon's. Length of wing, then, is not of itself an indication of great speed, so much as of the power of easy suspension in the air, and of continued flight. The osprey requires to hover long over the waters, often over the open sea at some distance from land, sometimes for hours together, before an opportunity of pouncing occurs. Its form, therefore, is as light as is compatible with strength, its wings long and unusually feathered, there being more quills in them than in those of the eagles or other hawks, while the tertiaries are moreover converted into quills." (*Rapacious Birds*, p. 124.) This bird breeds more frequently on trees than on the ground. Colonel Montague saw one on the top of a chimney of a ruined building. Dr. Fleming, in stating that it built its nest among reeds, probably was led to the supposition from Willoughby, who states its nidification as *inter arundines humi*.

2192. *The habits of the true sea-eagle of America are thus spiritedly drawn by Mr. Wilson* : — "Elevated on the high dead limb of some gigantic tree, he seems calmly to contemplate the motions of the feathered tribes below. High over all these hovers one, whose action instantly arrests his attention, by his wide curvature of wing and sudden suspension in air; he knows him to be the fish-hawk, settling over some devoted victim of the deep. His eye kindles at the sight; and balancing himself with half open wings on the branch, he watches the result. Down, rapid as an arrow from heaven, descends the distant object of his attention, the roar of its wings reaching the ear as it disappears in the deep. At this moment the eager looks of the eagle are all ardour; and levelling his neck for flight, he sees the fish-hawk once more emerge, struggling with his prey, and mounting in the air with screams of exultation. These are the signal for our hero, who, launching into the air, instantly gives chase, soon gains on the fish-hawk; each exerts his utmost to mount above the other, displaying in these rencontres the most elegant and sublime aerial evolutions. The unencumbered eagle rapidly advances, and is just on the point of reaching his opponent, when, with a sudden scream, probably of despair and honest execration, the latter drops his fish. The eagle, poisoning himself for a moment, as if to take a more certain aim, descends like a whirlwind, snatches it in his grasp ere it reaches the water, and bears his ill-gotten booty silently away to the woods." In proof, however, of the innate cowardice of this formidable robber, the same author adds, — "When driven, as he sometimes is, by the combined courage of the fish-hawks, from their neighbourhood, and forced to hunt for himself, he retires more inland in search of young pigs, of which he destroys great numbers. He will also attack old sickly sheep, aiming furiously at their eyes." (*Ornithological Dictionary*, p. 155.)

2193. *The great sea-eagle*, being now identified with the cinereous eagle, is, without doubt, that noticed by Sir Humphry Davy in his *Salmonia*, where *Poietes* asks, "What is that large bird soaring above the pointed rock towards the end of the lake? Surely it is an eagle? *Hal*. — You are right, it is an eagle, and of a rare and peculiar species, the grey or silver eagle, a noble bird! From the size of the animal, it must be the female; and her eyry is in that high rock. I dare say the male is not far off. *Phys*. — I think I see another bird, of a smaller size, perched on the rock below, which is similar in form. *Hal*. — You do; it is the consort of that beautiful and powerful bird; and I have no doubt their young ones are near at hand. *Poiet*. — Look at the bird! How she dashes into the water, falling like a rock, and raising a column of spray; she has dropped from a great height. And now she rises again into air: what an extraordinary sight! *Hal*. — She is pursuing her prey, and is one of our fraternity—a catcher of fish. She has missed her quarry this time, and has soared further down towards the river, to fall again from a great height. There! You see her rise with a fish in her talons. *Poiet*. — She gives an interest to this scene, which I hardly expected to have found. Pray, are there many of these animals in this country? *Hal*. — Of this species I have seen but these two, and I believe the young ones migrate as soon as they can provide for themselves; for this solitary bird requires a large space to move and feed in, and does not allow its offspring to partake its reign, or to live near it. Of other species of the eagle, there are some in different parts of the mountains, particularly of the osprey, and of the great fishing or brown eagle. I once saw a very fine and interesting sight above one of the crags of Ben Weevis, near Strathgrave, as I was going, on the 20th of August, in pursuit of black game. Two parent eagles were teaching their offspring, two young birds, the manœuvres of flight. They began by rising from the top of a mountain in the eye of the sun (it was about midday, and bright for this climate). They at first made small circles, and the young birds imitated them; they paused

on their wings, waiting till they had made their first flight, and then took a second and larger gyration, always rising towards the sun, and enlarging their circle of flight, so as to make a gradually extending spiral. The young ones still slowly followed, apparently flying better as they mounted; and they continued this sublime kind of exercise, always rising, till they became mere points in the air, and the young ones were lost, and afterwards their parents, to our aching sight." (P. 98.)

SUBSECT. 3. *The Falcons,*

2194. *The falcons* (*Falco* Linn.), properly so called, include the most important individuals of what are known after the falconer's grammar as the "noble birds of prey." "The *Falconide*, or falcons," Mr. Swainson observes, "exhibit the perfection of the order of rapacious birds; they are distinguished by a much shorter and sharper bill, more or less toothed, and by very acute and strongly curved talons. Their form, in general, is lighter, their flight more graceful, and their courage much greater than what we see in the vultures; unlike these latter, also, they live almost exclusively upon animals which they themselves have killed, resorting only to carrion or dead game when pressed by extreme hunger. The geographic range of this family, as a whole, is universal; for wherever other animals exist, there also these deadly enemies are to be found. From the arctic regions to the most southern limits of Australia, and from the western shores of Africa to the vast forests of Brazil, different races of the falcons abound; and yet there are very few species which inhabit widely remote countries. Some of those whose chief metropolis is in Europe, extend their range to the most northern parts of the new world, and even spread in the contrary direction to the more temperate latitudes of Asia; but the species of tropical America are totally different from those of western Africa, although many of these latter extend their range to the Cape of Good Hope, and some few appear, also, to be inhabitants of India." He also justly observes, that "The natural arrangement has excited more attention among modern naturalists, and has given rise to more controversy than any group in the whole circle of ornithology." (*Natural History of Birds*, p. 287.)

2195. *The division of falcons advocated by Mr. Swainson is into three groups: —* "The first contains the true falcons, having a deep and sharply angulated tooth (which is often divided into two) near the tip of the upper mandible; these compose the restricted genus *Falco*. The second is composed of the hawks, wherein the tooth just mentioned is not apparent, or rather it assumes a form of a rounded projecting lobe, or festoon, towards the middle of the margin; the shape of the bill, however, in other respects is the same; that is to say, it is short, high, and curved from the base: the wings are also more rounded than those of the true falcons, but both groups agree in having the tarsus fully developed. For these birds we retain the generic name of *Accipiter*, originally given exclusively to them by our great countryman, Willoughby. The third, which is the aberrant division, is characterised, as a whole, rather by negative than positive characters. The bill is weaker, less curved, and more straight at its base; it is never toothed, and seldom festooned or sinuated on the margin; while the wings, although rounded like those of the hawks, are considerably longer." (*Ibid.* p. 289.) The term aberrant will call to mind that Mr. Swainson forms all his zoological arrangements on the quinary or circular system. The genus *Aquila*, or eagles, is reckoned as one portion of the division just mentioned; the genus *Buteo*, or buzzards, as the second; and the *Milvus*, or kite, as the third. There is indeed much order and method in this arrangement.

2196. *The distinctive characters of the falcon family are thus stated by Cuvier: —* "The falcons are, for their relative size, the most courageous of the whole; their offensive arms, and the power of their wings, are proportioned to their courage. Their beak, bending from its base, has a tooth on each side at the point. The second quill feather is the longest; but the first is nearly as long, rendering the entire wing longer and more pointed. From these premises result peculiar habits; the length of the quill feather weakens their efforts at vertical flight, and renders it in a still air very oblique forward, and obliges them, when they wish to rise directly, to fly against the wind. They are very tractable birds, and are the most used in falconry, being taught to pursue game, and to return when called. All of them have the wings as long and longer than the tail."

SUBSECT. 4. *The Hawks.*

2197. *The terms hawk and hawking are so familiar*, that it might appear wholly unnecessary to enter into any explanation of them. But whoever regards these terms attentively, will be at once convinced that both have a popular or general acceptance, and also a systematic or restricted one, which, however the naturalist and the practised falconer may understand and readily discriminate, may not be so easily distinguished by others, who, on the contrary, are likely to consider the subject mystified without a helping hand from without, or much patient investigation of their own. If a hawking treatise were taken up by any one who was neither a naturalist nor a falconer, he would, ere he read half a dozen pages, become bewildered by the frequent use of these terms, both in their popular and restricted sense. Nor without some

assistance could an ordinary reader see his way through the contradictory maze. In proof of this it may be remarked, that one ornithological statement generally received, while it collects almost all the birds of prey under the term *hawk*, at the same time gives the reader to understand that *hawks*, properly so called, form a genus of very limited extent and small pretensions, having but two British types, the goshawk and the sparrow-hawk, and even of these the goshawk should be assigned a distinct niche in the opinion of some naturalists, which still further lessens the individual importance of the *hawk proper*. To remove the effect of these seeming inconsistencies, which obscure the history of birds of prey, we request attention to what will follow on *hawks properly so called*, in distinction to the common use made of the term in figurative language as used at large, not more by the poet, the historian, and the falconer, than by the naturalist himself. It is to be premised that the extensive use of the term *hawk* arises, without doubt, from the very large and very important family of birds of prey being described by our most accredited naturalists under the term *Accipitres*, derived, as is well known, from *accipiter*, the Latin name for the hawk, which thus occasioned the term hawk in common parlance to be conventionally used to denominate birds of prey bearing very different characters, dimensions, and properties; and thus also hawking, as a verb, claims an equally extensive sphere of action. The older poets and historians, no less than our writers on Natural History, offer ample proofs of the truth of our assertions. Bailey, the excellent lexicographer of by-gone days, has — “Hawk (*hieroglyphically*) was by the ancients put to signify the sun, being an emblem of its powerful influences in the world. Some have observed of this bird, that it can stedfastly behold the sun, and that its bones will attract gold (the metal of the sun) as the loadstone does iron. They also represented the Almighty by the body of a man covered with a long garment, bearing on the top of the head a *hawk*, because the excellence, courage, nimbleness, and good qualities of this bird, did shadow out the incomparable perfections of its Creator. And because the hawk is a bird of long life, it was an emblem of natural life; and was also used to signify a prudent, valorous, just, and brave man.” (Vol. ii.) Strutt, in his *Historical Account of the British Sports of early Times*, almost invariably uses the terms *hawk* and *hawking*; falconry being seldom mentioned by him, and falcon almost never: nevertheless, as we have already stated, and shall prove, the hawk is only a subordinate member of the falcon family. The same remark will apply to many of the old sporting treatises, where hawk and hawking are terms of much more frequent occurrence than falcons and falconry. In the old legal enactments, where great precision was required, *hawke* or *hawk* was employed to designate the falcon of whatever size and quality. Thus: —

“Great was the sorwe for that *hawke's* harme,
That Canace and all hire women made.”
Chaucer's Squire's Tale.

“And in their the soring *hawke* did toure,
Sitting like king of fowles, in majesty and poure.”
Spenser's Faerie Queene.

“*Hawking* comes near to hunting, the one in the
ayre as the other on the earth, a sport as much af-
fected as the other, by some preferred.”
Burton's Anatomy of Melancholy.

“Ride unto St. Alban's,
Whereas the king and queen do mean to *hawke*.”
Shakspeare.

“Dost thou love *hawking*? Thou hast *hawks* will
soar
Above the morning lark.” *Id.*

“A falc'ner Henry is, when Emma *hawks* ;
With her of tarsels and of lures he talks.”
Prior.

If we needed other proofs that all the preying birds used in falconry were ranked under the term *hawk*, we might assert that they crowd on us. The *Saxon Dialogues* in the Cotton Library speak thus of the fowler: — “How do you deceive fowls? — Many ways; sometimes with gins, sometimes with lime, sometimes with whistling, sometimes with hawks, sometimes with traps. Can you tame them? — I can; what use would they be to me if I could not tame them? Give me a hawk. — I will give it willingly if you will give me a swift hound: which hawk will you have, the greater or the less? — The less; the greater. How do you feed them? — They feed themselves and me in winter; and in spring I let them fly to the woods: I take for myself young ones in harvest, and tame them. And why do you let them fly from you when tamed? — Because I will not keep them in summer, as they eat too much. But many feed and keep them through the summer, that they may again have them ready. — So they do; but I will not have that trouble about them, as I can make many others.” Geoffrey Fitzpierre, history informs us, “gave two good Norway hawks to King John, to obtain for his friend, Walter Le Madena, the liberty of exporting a hundredweight of cheese; and Nicholas the Dane was to give the king a hawk every time he came to England, that he might have free liberty to traffic throughout the king's dominions.” (*Ibid.*) We shall only remark, that the old writers use the word hawk for falcons of every degree on almost every occasion, but they make use of the term falconer, in many instances, to designate him who makes use of the hawks, although in many others the term hawker is employed. We feel that we ought to apologise for thus trespassing on the patience of our readers; but having in our own noviciate felt the inconvenience of a want of precision in the naming of the subjects before us, and of the total variance between the *conventional* and the *technical* methods of considering them, we have endeavoured to smooth the path for other travellers over the same ground. We shall, in

conformity with this view, now proceed to consider the *hawk* in his proper *station* among birds of prey, stripped of the borrowed plumes in which ancient legends had bedecked him.

2198. *Hawks are considered as a group of birds belonging to the falcon family.* This group is systematically divided into hawks proper and goshawks. Modern naturalists further arrange the hawks under the term *Nisus*, and the goshawks under that of *Astur*. M. Savigny has formed a new genus for hawks, which he names *Dedalion*. M. Viellot calls them *Sparvius*.

2199. *The systematic characters common to both hawks and goshawks are thus clearly displayed by Mr. Griffith :—* “A beak greatly inclined from the base, and compressed laterally; the upper mandible greatly crooked, with a very marked tooth; the lower shorter, and obtuse; the cere smooth; the nostrils a little oval; the commissure, or division of the mouth, extending as far as below the eyes; the tongue oblong, thick, and sloped; the tarsi reticulated, principally on the sides, with a rank of lozenges in front; the four toes long, but considerably exceeded by the intermediate one; the talons crooked and accerated, that of the lower toe the longest of all; the first remex the shortest, the fourth the longest; the wings scarcely reaching half the length of the tail, which is rounded.” The differences between the two sections consist in the respective proportions of the beak, tarsi, and toes: thus the hawks have the beak shorter, the tarsi more elongated and slenderer than the goshawks; they also have the last phalanx of the intermediate toe passing the talons of the lateral toes; the tongue is also more sloped than that of the goshawks, and the latter in general are stronger built and of a less elegant shape. Both the hawks and goshawks in their plumage exhibit a character which distinguishes them from other birds of prey; when adult and past the second moulting, they have transverse stripes on the lower part of the body, where, previously to this age, there were longitudinal bands.” (*Ibid.*)

2200. *The natural habits of the hawk are thus treated by the same authority :—* “The conformation of their wings does not permit them to fly so high, nor so long, as some of the other *Accipitres*, which have longer wings; and it obliges them to employ stratagem in the procuring of their prey, while the other *Raptores* fall upon it almost perpendicularly. Their flight is low and horizontal, and they dart sideways on the birds which pass within their reach. When obliged to repose, they fix in the midst of tufted trees, from which they watch partridges, fringillæ, field-mice, and other small *Mammiferæ*; consequently their mode of hunting naturally removes them from the close covert to the open fields, which are bare of trees. The goshawks, being stronger, attack hens and pigeons. All these birds deplume their feathered prey, and tear it in pieces before they eat it. But they swallow the small *Mammiferæ* entire, the skin of which, rolled up, is rejected by the mouth. It is only during summer, and the back season, that hawks are seen dispersed in the fields, where they are frequently observed alone, though the two sexes are usually at no great distance from each other; but the male and female, to avoid interfering with each other in hunting, are generally perched on separate trees. Sometimes, however, entire families are met with, hunting together, but such assemblages only take place during the early age of the brood, while the parents are instructing them in the exercise necessary to procure subsistence: a proof that there is a natural education among animals, and that all is not mere instinct.” (*Animal Kingdom*, vol. vi. p. 238.) We have been led to borrow thus largely from this accredited source, because we have met with no description of the hawks which united popularity with system so happily as this, which we hope will plead our excuse.

2201. *The generic characters of the kite (Milvus), according to Dr. Fleming, are,* “Plumage, above, deep brown, with pale edges; beneath, ferruginous, with dark longitudinal stripes. In length the kite is twenty-eight inches, breadth sixty-four; weight forty-four ounces. Bill yellowish, with a dusky tip; cere and irides yellow. The feathers on the head are light-coloured, with a dark streak on the shafts. Quills twenty-four; inner webs of the first four, and outer webs of the third and fourth, abbreviated; black at the extremities. Two outer tail feathers more produced, and darker than the others. The female has the brown and pale edges of the feathers more distinct, the latter passing into white. Breeds in trees, making a nest of sticks, lined with wool. Eggs three or four. In the young, the feathers of the head are more rounded, and destitute of longitudinal dark stripes. Feeds on reptiles and dead fish. Is stationary in Britain. (*Fleming's British Animals*, p. 51.)

2202. *The exterior characters of the buzzards bear the accipitrine stamp.* Their wings, like those of the falcon, are almost as long, and in some of the species even longer than the tail; but they differ in having the first quill feather very short, and the third and fourth the longest. In the true buzzard the tarsi are short. As hawking agents their reputation is very small. Sluggish in nature, somewhat indistinct in their vision in the noon-tide glare, they have seldom fulfilled the sportsman's intentions; and however they might have been employed in olden times, we believe no attempts are now made to train them in Britain.

SECT. II. *The Falcons and Hawks employed in Hawking.*

2203. *The falcons and hawks* now employed in falconry, we repeat, are few in comparison with those used for the purpose in olden times. Colonel Thornton, the most noted falconer of our times, gives the following list of the falcons and hawks which have been mostly employed in this kingdom : —

The gerfalcon, and its male the jerkin.	
The falcon, ditto,	tierce gentle.
The lanner, ditto,	lanneret.
The bockerel, ditto,	bockeret.
The saker, ditto,	sackerel.
The merlin, ditto,	jack-merlin.
The hobby, ditto,	jack or robin.
The seletto of Spain.	
The blood-red rook of Turkey.	
The waskete from Virgilia.	

Of the short winged are the following : —

The eagle, and its male the iron.	
The goshawk, ditto,	tiercel.
The sparrow-hawk, ditto,	musket.
The two sorts of French pie.	

Of the inferior : —

The stangel, or ring-tail.
The raven and buzzard.
The forked kite and bold buzzard.
The hen driver, &c.

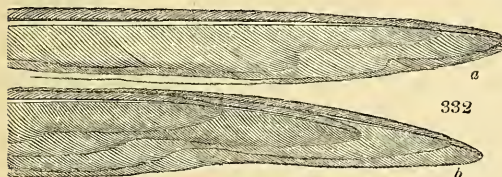
The sporting colonel, however, omits to notice the castrel (kestrel) and her jack. We shall ourselves pursue the subject in detail, and it may be well to commence our account of the *Falconidæ* by noticing the difference of size between the sexes. Contrary to what is observed in most others, the male among birds of prey is, we believe, invariably the smallest, in most cases by one-third, and of course is the least efficient in power. Consequently in the use of any of these birds for hawking purposes, a marked difference has always been shown, not, we should here say, to the more gentle sex, though it is to the ladies, which, being in this instance the larger and stronger, are the most ungente of the two. Thus in hawking it is the hen birds that are most highly esteemed, and almost exclusively employed, and they will consequently take the precedence in our practical detail; when, therefore, the sex is not specifically noticed, it may be presumed to be a female that is alluded to.

2204. *In designating the sex of falcons and hawks*, arbitrary terms were imposed by the falconers of early times, according to the species intended, which should be borne in mind to enable us to understand the writings of ancient falconers. These male designations are noted at length in the list of falcons and hawks in use in times when falconry prevailed over all the other field sports. The ages also were known by arbitrary terms, as the female yearling was called a *red falcon*; the male a *red tiercel*, and when reclaimed (*i. e.* trained) was a *gentil* or *gentle hawk* of any kind, though afterwards by corruption *gentil* was used as the proper name of an individual falcon.

SUBSECT. 1. *The Wings of Falcons and Hawks, as Aids in Flight, and as Characteristic of their Rank.*

2205. *Falcons and hawks are popularly divided into long winged and short winged*, which division is of itself a proof of the difference of power in flight which results from a particular form of the wings of these birds. To illustrate the effects of these variations, we will attempt some explanation of the means by which raptorial birds overtake their prey, and of those by which they almost invariably destroy it, themselves usually coming seatless out of the fray. The wings of birds, we need not repeat, are the great organs of motion in them; it is the wings also which direct and increase the force of the blow given by the pursuer to the pursued, the beak and talons helping to complete the bloody task, and effect the dismemberment of the carcass of the victim. Most of the ancient authors treated only of the mechanics of hawking, or of rearing and training the predacious birds to the purposes of the falconer; and it remains for the moderns to direct our attention to the philosophy of this aerial warfare. Among these M. Huber, in his *Observations sur le Vol des Oiseaux de Proie*, published in 1784, has signalised himself more than any former author. We are also indebted to Mr. Griffith for a very interesting summary of this ingenious writer's opinion on the subject, of which we have availed ourselves to a certain extent. We would nevertheless recommend those particularly interested in the sport, to refer to M. Huber's work itself, or otherwise to Mr. Griffith's *Animal Kingdom of Cuvier*, vol. vi. M. Huber divides "the wing into *rowing* and *sailing* wings (*rameuses et voilières*). The birds provided with the former sort he calls *rovers*, birds of high flight, or, as in the old French, *de leurre*; the latter he calls *sailers*, birds of low flight, in their hawking vocabulary, *de poing*." We also retain these distinctions; indeed, it will be seen that they are strictly correct, as all falcons of high flight are necessarily trained to return from aloft by the *lure*, which is conspicuously swung around the head; whereas, those of low flight, not being so remote, return to the *fist*. "The wing of the first is slender, attenuated, not much convex; and, when unfolded, subject to very considerable tension. The first ten quills are entire, and their barbs touch each other without discontinuity in their entire length. The motions of this wing are easy, rapid, and strong: accordingly we find the rowers fly against the wind, with the head straight, and raise themselves without difficulty into the highest regions of the air, where they sport in all directions."

2206. *The wings of birds of rapid flight* are called by Mr. Swainson emarginated wings; at the same time he observes of them, that "They are obviously formed for the purpose, but that they have nevertheless no fixed character in the proportion of the exterior primaries; for in some groups the first quill is as long as any of the others, while, in other instances, the first, second, and third quills are gradually shortened; the true distinction of an emarginate wing consists of a sudden notch, or sinuosity, more or less abrupt, which is found on the margin of the inner shaft of the longest quills. This notch in the true falcon is situated near the end of the shaft (*a*, fig. 332.); but in the sparrow-hawk, and others of the "ignoble" hawks, it is placed at the base (*b*). The flight of these latter birds is well known to be



EMARGINATED WINGS.

less powerful than that of the typical falcons; for their three first quills are gradually shortened, whereas the "noble" race has the first quill feather nearly as long as any of the others. In the owls, the situation of the notch varies; for in some it is near the end, in others toward the middle of the quills. This structure, the precise use of which it is difficult to explain, is universal among the rapacious birds." (*Loc. cit.* p. 89.)

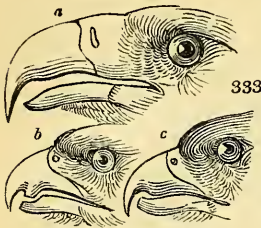
2207. "*The wing of the sailers*," continues our first authority, "is thicker, more massive and arched, and less stretched in the act of flying. The first five quills, of an unequal length, are sloped from the middle to the extremity: thus, that portion of the wing which is most important for the purposes of flight presents an interrupted surface to the air; and the wing itself, actuated by forces of less energy, fails of producing so perfect an effect. We find, therefore, that these birds can only fly with advantage when the wind is in their rear. They keep their heads low, and seldom rise but for the purpose of discovering their prey; and here the French term *planer* (to hover) very appropriately depicts this mode of flying, in which the wings are extended and motionless, and the body is carried along by the course of the wind: in fact it is, strictly speaking, a sort of sailing. The quills of the rowing wing are also in general, more firm than those of the sailing; and this is indicated according to M. Huber, by the lively and marked variegation which predominates in the first, from one end to the other; while in the last a deep, uniform, black wash prevails from the sloping of the feather to the point, and a white, equally uniform from the origin of the quill to the commencement of the sloping. (*Griffith's Animal Kingdom of Cuvier*, vol. vi. p. 206.)

SUBSECT. 2. *The Beaks and Talons of Falcons and Hawks, as Organs of Offence, and Characteristics of their Degree of Nobility.*

2208. *The beaks or mandibles of birds of prey* are employed, in common with the wings, in stamping on them those characters of nobility so often remarked on by naturalists, and considered so important by falconers. The beaks of these birds are essentially cutting instruments, being employed in the destruction and dismemberment of their prey, rather by pressing their opposed edges together than by striking with the point. These *tomia* have their line interrupted in most, but very differently in some to others. In some it is by a waving line only, in others the interruption offers a more strongly marked festoon, and again in a third set it presents a prominent tooth-like process, both strong and sharp.

2209. *The general characteristic of the beaks* of each member of this predacious family is that of strength. In all it is short and compressed in comparison with its length; from its base to its apex, the culmen or ridge of the upper mandible curves irregularly forward to its point in a hook-like manner. The cutting edges of both mandibles are also curved in their outline, but are interrupted variously, according to the species, as we shall point out hereafter. The lower mandible is also strong, but less incurvated throughout. Its *tomia*, or upper surface, adapts itself to the peculiarities of the *tomia* of the upper mandible. Its tip ends abruptly, as seen in the figures of exemplification, so as to enable it to just slide within the curved point of the upper portion of the beak. The whole line of the *tomia* of the lower is variously indented, or otherwise extended, to adapt itself exactly to the irregularities in the edges of the upper. This exact application of these upper and under surfaces, and the action arising therefrom, has been forcibly and justly characterised, by describing it as compounded of the direct cut of a chisel and the drawn cut of a knife. It is on the variation of this general outline, in conjunction with length of wing and strength of talon, that the characters of noble and ignoble birds of prey are formed. We will now proceed to apply our outline to the various grades of the preying birds, in the order of our individual description of them.

2210. *The beaks of eagles of every species are more prolonged from the base than those of the falcons and hawks of all kinds (fig. 333.).* The upper mandible of the eagle's beak



BILLS OF RAPACIOUS BIRDS.

curves moderately only for two-thirds of its length, the remainder, however, bends into a powerful hook. Its *tomia* is very slightly interrupted, and can hardly be said to offer any dental process whatever. Much therefore as we admire the lofty bearing, the poetic descriptions, the size, and the powers of this bird, we must nevertheless class him with the ignoble as regards his bill, though, as a redeeming trait, his wings are of the requisite length. We venture also another suggestion to rescue him from degradation, which is, that nature gives nothing in vain, and never loads her children with more than they actually want. This beneficent mother has, it is true, denied to the eagle and

the vulture these mandibular attributes of nobility; but has she given to the former such immense powers, both of acquiring food and of abstinence, as to make these additional armatures almost unnecessary? The vulture also, being able to satiate itself on dead carcases, does not need this addition. Are we not likewise somewhat borne out in the assumption, that this deprivation is an equalising one, from the further fact that the Iceland falcon, which is larger by one-fourth than any other member of the genus, wants a full development of the tooth-like process on the lower mandible? but having the required length of wing, united to great power and courage, it has, in the estimation of every practical falconer, been elevated to an equal rank with others of less size which possessed the toothed beak.

2211. *The bills both of hawks (b) and falcons (c) in fig. 333., as already stated, are shorter than that of the eagle (a): and it is also worthy of remark, that the tooth-like process in the bill of the hawks is seen, in the majority of them, to be more developed or prominent than it is in the falcons.* In these several instances, however, the bounty and the equality of nature's gifts are conspicuous; for, notwithstanding this seeming superiority of armature in the bill of the hawk, it is nevertheless evident, on examination, that the bill of the falcon altogether is a more formidable weapon than that of the hawk; and this superiority is particularly evident in the rowers on the wing, known as the noble falcons of high flight. In them the culmen of the bill, by springing directly from its base, gives great power to the organ, and enables the tooth-like process or angle in the *tomia*, or cutting line of the upper mandible, to rend the prey most destructively. The utility of this specialty of formation must be apparent, when we consider the habits of these birds, who tear to pieces not vegetable but animal matter, and not dead but living animal substances. To this end organs similar to the teeth of the carnivorous quadrupeds were necessary. It is probable that it is the force of the blow of the sternum, and the vice-like pressure of the talons united, that kill; but the dismemberment of the prey is left to the beak, which is less formidable at striking than a bill of a straighter form, like that of the raven or magpie. But for skinning, depluming, and dismembering the quivering victim, no apparatus can be better devised.

2212. *This beak has been aptly called a typical one by Mr. Mudie, and it certainly exhibits the type of perfection in the order for predacious purposes.* His own words are, — "In proportion as the different species of falcons and hawks have the bill approaching to this typical one, they are preys on the wing, and consequently preys upon birds, killing their own game, and eating it in the recent state. In proportion, too, as they have this structure of the beak more perfect, they fly at "higher game," or birds of more powerful wing. The plumage of these is more firmly set, and the tendons, and even the muscles, are much tougher than in birds of lower flight; and besides, the low-flying hawks, harriers, and buzzards, strike prey upon the ground, and prey upon small *Mammalia*, or occasionally take a mess of carrion or garbage. It is thus, not without some shadow of reason, that the high-flying falcons were called 'noble,' and the low-flying ones 'ignoble'; for there is a sublimity in their style of hawking, as compared with that of the others. They are the genuine birds of prey; for though they descend to the earth to strip and eat their game, their preying is, in a state of nature, confined to the air, the appropriate region of birds." (*Natural History of Birds*, p. 169.) In this list we enumerate the peregrine falcon, in all its fancied varieties, the merlin, the hobby, and the kestrel.

2213. *The gerfalcon, as regards his beak, must be considered as an intermediate between the noble falcons and the ignoble hawks; and although Mr. Mudie describes the dental process as prominent and well defined, yet it cannot be said to present an equal armature, and consequent claim to rank, with the peregrine and other noble falcons.* We, however, perfectly agree with him, that this falcon is stronger in proportion to its size and quantity of matter than most other birds; Mr. Mudie indeed says, "than of any other." We confess that the accounts given of this beak are rather conflicting. Cuvier, if we mistake not, likens it to "the blunt-toothed bill of the hawks." Mr. Griffith observes, "the falcons

proper are distinguished by a tooth more strongly defined, on each side of the upper mandible, which in the gerfalcons is a mere festoon." Mr. Macgillivray's description of it runs thus: "The upper mandible has the edges a little inflected, rather obtuse, with a slight, sometimes an obsolete, festoon, the tooth-like process distinct, and rather rounded." Mr. Mudie, on the contrary, presents us with a figure taken, as we have reason to believe, from an Icelandic specimen, the property of Mr. Yarrell. "Here," observes Mr. Mudie, "the tooth is prominent, the notch well defined, and the tomlia curved in the greater part of their outline." Discrepant as these accounts appear, it is not difficult to reconcile them, when we consider the variations which are seen in individuals among the *Raptores* of the same species, occasioned by varying ages, localities, and habits. The great importance of this bird to the falconer, and the interest he must exult in the naturalist and bird-fancier, have prompted us to this detail. We shall only further remark, that, in strict accordance with that depreciation in rank which the defective armature of the beak attaches to him, is the curtailment of his wings, which do not extend to the end of the tail by four inches. The legs, short and strong, are feathered down one-third of their length; anteriorly they are mailed, and terminate in toes strong, scutellate, and furnished with sharp massive claws.

2214. *The consideration of the beak of the hawks* introduces us to the ignoble birds of prey, so called from their being defective in the requisite degree of length and strength in the armature of the bill, as well as in the length and formation of their wings. These are the sailers of M. Huber, and the short winged hawks of the practical falconer. Our prominent examples of them are the goshawk and the sparrow-hawk (*fig. 333.*). Both are, however, reputed agents in hawking, particularly the former, whose elegance of form and powerful make, have stamped him although a bird of *low flight*, as a very valuable auxiliary in the sport of hawking. The beak of the goshawk is short and strong; its culmen slopes slightly as far as the edge of the cere, and then incurvates sharply; the edges are anteriorly very sharp, and present a broad festoon beyond the middle. The tip, however, is very acute, and the general strength of the whole compensates for its defective armature; the wings also are of moderate length; the legs, feathered down one-third of their length, are mailed before and behind with powerful scutella. The toes are strong; the third and fourth are webbed together as far as the second joint.

2215. *The beak of the sparrow-hawk* differs somewhat from that of the goshawk in being shorter, and in having its festoon more in the centre of the edge of the upper mandible; the tip is very acute, and its point nearly perpendicular. The wings of the sparrow-hawk are of moderate length, and barely reach the middle of the tail, which, however, is none of the shortest. The tarsi, or legs, are long and slender; as are the toes also, which are terminated by black sharp claws.

2216. *The offensive organs of the remaining birds of prey* will not detain us, as any peculiarity in their construction, however interesting to the naturalist, would prove little so to the falconer's practice. Of the bills of the kite and the buzzard we need only remark, that their armature becomes more and more obsolete as we descend in the list, although the general strength and substance does not vary in equal proportion. The beak of the owls is toothed, we believe, in most of the species; it is also short and acutely hooked, and, further, it exhibits the peculiarity of having its toothed process not on the upper, but on the under mandible. On the wings and feet of these several varieties, we shall reserve whatever we may have to say for our notice of those birds individually.

2217. *The talons of birds of prey* are very active agents in their hawkings. Mr. Swainson calls these raptorial feet, as being adapted to seize and destroy. Those of the noble kinds, M. Huber remarks, are longer, more supple, and altogether more mechanically framed to



CLUTCHING FEET.

take a firmer hold of their quarry, than those of the sailers. Mr. Mudie very expressively calls these "clutching feet," which are expressly formed for using in the air; and he considers the foot most typical of these powers to be that of the gerfalcon (*fig. 334.*). "The character of these clutching feet," says this popular writer, "is to have four toes, all free to their bases, and three turned to the front, and one to the rear, in the general habit; but those

species which fish have the exterior front toe reversible, so that the toes act two against two, and thus lift the prey more easily out of the water, than if they had the common position. When the toe is reversible, it is generally the largest in the foot; and the claws upon these feet have their under sides smooth and rounded, as well as the upper ones; whereas those birds which use the feet only in killing, have the under sides of the claws grooved, or with two cutting edges, by which means they inflict much more lacerated and mortal wounds. The claws of the more typical birds of prey (which are the only ones that get the name of talons), are used only in killing the prey, or in holding it while depluming, skinning, or tearing asunder, by the beak; but the vultures and other less typical species, which eat carrion and rarely kill living prey, use the claws more for retaining their hold, while they stand on the bodies of dead animals. Size is not so much an indication of power in these feet as compactness

and symmetry ; the tarsi of the more powerful ones are all short ; and in proportion as the preying of the bird becomes what is called more ignoble, the tarsi increase in length." (*Natural History of Birds*, p. 241.)

2218. *The methods of attack of both the long winged and the short winged hawks* are spiritedly and accurately touched on by Huber. "The rowing birds," he remarks, "pounce at once on such prey as is at the same time light of weight and slow in movement. On the contrary, when one that is heavier and more active is the object, they first attempt to arrest its progress ere they finally rake it. With an instinctive precision, they also at once attack the tenderest and most vital part, as the head of birds, and between the shoulder and the ribs in beasts." But, with all due submission to M. Huber's opinion, we must from authentic information state, that both the common falcon and the gerfalcon can at one stroke break the neck of a hare. M. Huber however, in a general sense, is correct, when he asserts that the smaller hawks, of good breed, are more instantaneously destructive to their prey than the larger. The precision with which the fatal stroke is given, he likewise justly observes, is not so great with the sailers as with the rowers, the former rather compress and strangle their prey than break it up : a hare they seize by the throat with one talon, and hold it until it is dead.

2219. *The action of the feet of the falcons*, when seizing their prey, is the effect of position. Mr. Mudie, after his admirably descriptive fashion, says, "It is an oblique thrust, neither directly against the end of the last phalanx of the bone, nor across it, but in a tangent to the curvature of the claw at its point ; and any one upon examining the foot of a falcon, will find that this is the very direction in which a shock can come so as to jar or strain the least possible, and at the same time to divide the pressure most equally among all the joints of the member which acts. If the stroke were given directly in the line of the axis of the toe and claw, the crush or jar would be in all probability most injurious, for hard as are the bones, and tough as are the tendons and ligaments in the foot of the gerfalcon, they could not hold directly against so terrible a rush as this ; and were she to strike against a solid and fixed substance, she would be dashed to pieces by her own velocity ; or, in other words, would perish through the very excess of her own strength. But the violent motion of this bird, the circumstances under which it is exerted, and the organisation by means of which it is performed, are all admirably adapted to each other. The stroke of the falcon, unlike the spring of the beasts of prey, or even the stoop of the eagle, and the other predatory birds which kill their prey upon the ground, does not, in itself, arrest the violence of her motion ; for when she misses, if she hawks at flocking birds, as she often does, she dashes onwards, and strikes again ; whereas the lion and the tiger must pause and again crouch before they can take a second spring, and the eagle must regain her height before she makes a second stoop. Thus the prey of these wild beasts, if not captured at the first attempt, has a chance of escape much greater than the prey of the gerfalcon." (*Loc. cit.* p. 103. 105.)

SECT. III. *The Falcons and Hawks principally employed in Falconry.*

2220. *When falconry, or hawking, was the all prevailing sport*, almost every one of the falcon and hawk tribes was trained to the purpose, although even then some were more highly prized than others. At the present time the list of the falconer is very much curtailed, and a few of the most tractable only are now employed in it. As however it is our intention to treat somewhat fully on this once popular pastime, we shall notice more or less each individual member of the raptorial family. As we conceive we best consult both the entertainment and the information of our reader, when we blend the systematic characters of the living objects with the uses to which they are applied in the service of the sportsman, we shall commence our account of the gerfalcon, and that of the peregrine which is to follow, by calling to mind that between the gerfalcon and the peregrine falcon there are differences, which have made it necessary to divide them into two sections. "The falcons proper are distinguished by a tooth more strongly defined on each side of the upper mandible, which in the gerfaleons is much less prominent ; the lower mandible is also much more sloped at its point in the true falcons." (*Animal Kingdom*, vol. vi. p. 196.) Were we therefore to follow in the order of systematic rank, we should set out with the peregrine falcon ; but having commenced the order of our display by the popularity which size and strength give to the living objects, we shall in this instance do the same, though it will be perceived that even to this we shall not slavishly adhere, but shall so frame our descriptions as that they may follow somewhat in the order of our practical detail. We cannot proceed further without restating it as our opinion, that hawking will again become a popular amusement. Its high bearing and its great antiquity give it a strong hold on our admiration and regard. It offers little to excite the stigma of the sensitive, nor does it interfere with the rights or properties of our neighbour. It gives a spur to natural history, and tends to illuminate many of its dark pages. Gambling has little connection with it. Commerce is benefited by it, and its associations have a loftiness of character about them, that tends to enterprise in the pursuers of it.

SUBJECT. 1. *The Gerfalcon.*

2221. *The gerfalcon* (*F. candicans*, *F. cinereus*, and *F. sacer*) Gm. *Enl.* p. 210. 462. and *Histoire des Oiseaux*, i. pl. 14. Edw. 55 “one-fourth larger than the falcon, is one of the most esteemed birds for falconry. It is brought principally from the north. Its common plumage is brown above, with a border of paler point to each feather, and transverse lines on the coverts and quill feathers; whitish underneath, with long brown spots, which change with age on the thighs into transverse lines; the tail is radiated brown and greyish, but it varies so much in the prevalence of brown or white, that there are some with the body all white, with only a brown spot on each quill of the mantle; the feet and membrane of the beak are sometimes yellow and sometimes blue.” (*Animal Kingdom*, vol. vi. p. 32.) Such is Cuvier’s systematic description of this bird, whose very name appears to carry with it something mystic, and whose clothing, varied by time and habitation, has subjected it to be divided and sub-divided, until confusion became worse confounded with regard to it. We offer the following ingenious observations of Mr. Griffith, as directly applicable to the difficulty we feel in attempting a satisfactory history of this prime favourite of the falconer:—

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THE GERFALCON.

“Etymological affinities, which are so often found to throw light on many subjects, seem to have contributed to obscure the natural history of the gerfalcon. Belon traces the origin of this name to the word gyps, a vulture, and falco; and the word gyrfalco seems immediately formed from geyser, the German for a vulture, and falco. This association of terms, so incompatible with a just designation of birds of different genera, might surprise us, if we had not numerous examples of the uncertainty of naturalists of that day respecting distinctive characters, and the proper allocation of certain animals. The vagueness, however, of such terms can be easily rectified by a more intimate acquaintance with the true characters of the species; yet it leaves an inconvenience of another nature which has resulted from Belon’s exclusive application of the Greek term *hierax*, equivalent to the Arabian word *sagr*, to a species which, perhaps, has no existence, or is, at all events, doubtful: probably neither of these words was restrained in its acceptance to a single bird; but was used in a general way to designate a class of birds venerated by the ancient Egyptians, who moreover distinguish the *hieraces* (falcons, hawks, and goshawks) from the vultures, which latter were held in equal veneration, but from different motives. Examination of the Egyptian monuments has proved that it was the common goshawk which was represented on the temples, obelisks, and particularly on the Isiac table, where even the distribution of its colours is observable. If then the *Hiero Falco*, the *Falco sacer*, the *sacre* of Belon and others, can be considered as forming the peculiar type of any one species of falcon, there is no reason why these denominations should be applied to the gerfalcon rather than to the common falcon. It remains, perhaps, yet to be verified, whether the white gerfalcon and the gerfalcons of Iceland and Norway be particular races, simple varieties, or mere individual differences of age and sex. It is, however, safer to stick to the specific characters of the gerfalcon as given in the text, and applied to all of these, than run the risk of adding to the errors and confusion already far too great.” (*Ibid.* vol. vi. p. 204.) We would however strongly recommend the reader to the work quoted from. The exact weight, both being in good condition, of the peregrine is two and a-half pounds, and of the gerfalcon four pounds.

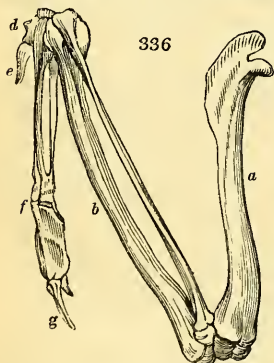
2222. *Of the gerfalcons* (*Hiero Falco* Cuv.), it may be observed, that it has not been generally adopted as a genus, although it stands thus in the text of Cuvier with the following generic characters:—“The gerfalcons have the quills of the wings, as in other noble birds to which they are assimilated, except that the beak has only a festoon, as in the ignoble birds. The tail, long and displayed, exceeds the wings, although the latter are very long: their tarsi also, short and reticulated, are feathered to the upper third. Only one species is well known.” (*Ibid.* vol. vi. p. 31.)

2223. *The identity of the gerfalcon* with the so-named Iceland falcon, we think there is no reason to doubt, notwithstanding the respect we are inclined to pay to the opinion of Sir John Sebright, who considers them as distinct individuals. We feel assured from the concurrent testimonies of naturalists and falconers, that this falcon is subject to considerable

variation in the colours and markings of its plumage, both from age and locality. By the former it varies in common with all the *Falconidæ* at each periodic moulting; and by the latter it would appear to lose the strength of its rufous spots, and to become almost white, as its *habitat* approaches the poles. These views being not only in strict accordance with the known variations which occur in other birds by geographical distribution, but also as agreeing with the notices of observant naturalists and travellers who have examined these birds in various localities, leave us little room to doubt as to the identity of the gerfalcon and the Iceland falcon. The saker and sackerel of the old falconers is now well known to be the gerfalcon at some particular age.

2224. *On the predatory powers of this noble falcon*, Mr. Mudie, in his *Natural History of Birds*, is very emphatic. He considers it the "boldest, the most perfectly winged, and, in proportion to its weight, the strongest both for action and endurance of all the feathered tribes. Dwelling in the wilds of nature, subjected to violent winds, to heavy snows, and to long-continued rains, and compelled often to endure long periods of abstinence in those parts of the world where there is not a tree, and hardly even a bush, for the shelter of a bird, and requiring at other times to range for several hundred miles before it can procure a meal either for itself or for its young; the gerfalcon, estimating according to the average powers and experiences of animals, may be said to have the hardest lot in the whole kingdom. But even upon this, the grand extreme, as it were, of his works, the Creator has not left himself without a witness; for if the task which the gerfalcon is called upon to perform in nature is harder than that of most other birds, the preparation of this falcon for the performance of it is greater in the same proportion." (P. 97.) Its great powers might, indeed, be presupposed on the bare inspection of its skeleton (*fig. 312.*). Little is wasted on the length of the individual bones, but much is expended on their strength. The neck bones all admit of free motion, and, to use the words of Mr. Mudie, "The position of repose, or that in which all the bones bear equally upon each other, is a curve. All the vertebræ of the back, at least as far as the posterior edge of the sternum on the under side, are soldered together, and afford a firm base for the blade-bones, which are considerably produced, and lie nearly parallel to the mesial line of the spine. The coracoid bones are strong, and enlarged at their extremities, where they meet the anterior edge of the sternum, though they are more flattened there, so as to agree in thickness with that bone. The furcal bone is also a perfect circle, and placed with its flat side in the direction of the strain, so that it resists the separating or bringing together of the shoulder joints, the grand centres of motion for the wings, in the most powerful manner that could be obtained from the same quantity of bone. This bone, it will be perceived too, forms a large opening, in which the neck can play freely, without the least pressure upon any of the important vessels which it contains." (P. 100.)

2225. *The bony mechanism of the wings of this falcon* is equally worthy of admiration; and, as it offers an instructive exemplar of the general bony mechanism by which the very powerful flights of these aerial wanderers are operated, we shall present a distinct plan of the bones of the wing of this falcon (*fig. 336.*), where *a* will mark the humerus, which is one



GERFALCON'S WING BONES.

of the longest, and also the strongest and heaviest bone in the wing; we say one of the longest, because it may be observed that the cubitus *b*, which corresponds with our fore-arm, or the bony assemblage between our elbow and wrist, is somewhat the longest, and is also slightly curvilinear. With this exception, the sizes and the lengths of the other wing bones diminish in the proportion of their other dimensions; and have this effect, that although, when the wing is in motion, all the parts move with velocities in proportions exactly commensurate to their distances from the centre of action, yet the effect of the whole organ remains uniform; and hence it follows, that this falcon, when engaged in powerful flight, strikes the air uniformly with every portion of the under surface of the wing. It being convenient and usefully illustrative to carry on the comparison between the bones of the wings in birds and those of the arm and hand in man, we proceed to state that *a* and *b* mark the radius and cubitus, or bones of the arm and fore-arm; *c* the ulna, which, it will be observed, is comparatively more slender in the bird than in man. To proceed with our comparison, *d, e* mark what we have elsewhere noted as the bastard wing of the bird, corresponding with the human thumb, but which in the bird is confined to two phalanges only. The metacarpal bones, corresponding with the rest of the hand, are marked by *f, g*, which space is, however, principally occupied by the type of the human fore-finger. Mr. Mudie, after his admirably descriptive manner, observes, that "The stiffness of the intermediate joints in such a wing, the perfect freedom of the shoulder joints, and the remarkably steady base which, from their size, form, and place, the scapular, the coracoid, and the furcal bone, give to the centre of action, render the flight of the bird exceedingly

smooth; and though it is heavy for its bulk, and even for the length of its wings, the gerfalcon never appears in the least to labour on the wing. Birds more loosely boned in any of the respects that have been mentioned, are incapable of this perfect steadiness and beauty of flight. The short winged among them flutter, as if they had not wing enough; and the long winged ones have their bodies tossed upward by the down stroke of the wings, and downward by the up stroke, as if their wings were too much for their management. This falcon, however, having to range over somewhat bare and very stormy pastures, has its wings and its body adapted to each other with the utmost nicety, so that it can rush onward in any line of direction that it pleases without the least deviation; therefore it flies from point to point by the shortest line possible; and thus, while it is the perfect model of power in flight, it is at the same time the perfect model of economy." (*Natural History of Birds*, p. 101.) The admirable mechanism of the legs and feet, for its predatory purposes, has been already noticed in p. 667.

2226. *The female gerfalcon is larger than the male*; but in the use of these noble birds, which are so difficult to be obtained, falconers are not so fastidious as to the sex as in the lesser hawks, for where a male of two years old was twenty-two and a half inches in length, and a female of the same age was twenty-four inches only, the difference would not be great between the powers of the individuals. The variations in plumage, according to Mr. Macgillivray, are not so considerable between the sexes in this falcon, the colours of the female being nearly the same as those of the male, except that her spots are larger, particularly on her breast and sides. The accounts of some authors, however, lead us to believe, that as they become aged these spots entirely disappear in both sexes, and leave them almost of a pure white. In those of the most northern localities this is particularly observable.

2227. *On the habits of the gerfalcon, or Iceland falcon*, Mr. Macgillivray remarks, that "It locates in the cold regions of both continents, but particularly in Iceland, and that opportunities of observing its habits are so rare in Britain, that we have few authentic accounts thereof by British writers. Dr. Richardson," he observes, "states that, 'It is a constant resident in the Hudson's Bay territories, where it is named the speckled partridge-hawk and the winterer,' and gives the following anecdote respecting it: — 'In the middle of June, 1821, a pair of these birds attacked me, as I was climbing in the vicinity of their nest, which was built on a lofty precipice on the borders of Point Lake, in latitude $65\frac{1}{2}^{\circ}$. They flew in circles, uttering loud and harsh screams, and alternately stooping with such velocity, that their motion through the air produced a loud rushing noise. They struck their claws within an inch or two of my head. I endeavoured, by keeping the barrel of my gun close to my cheek, and suddenly elevating its muzzle when they were in the act of striking, to ascertain whether they had the power of instantaneously changing the direction of their rapid course, and found that they invariably rose above the obstacle with the quickness of thought, showing equal acuteness of vision and power of motion.' Mr. Audubon, who found it breeding on the coast of Labrador in 1833, states that its flight resembles that of the peregrine falcon, but is more elevated and rapid; that, when proceeding directly to a certain point, it seldom sailed, but used a constant beat of the wings; and that, after balancing itself in the air over a puffin standing on the ground near its burrow, it would descend upon it with astonishing rapidity, and, shaking its feathers while ascending with its prey, carry it off with the greatest ease. Mr. Jones, who had been a resident in Labrador for twenty years, informed him that this species, which the fishermen called the duck hawk, destroys there an immense number of hares, rock partridges, and willow grouse." (*Rapacious Birds of Great Britain*, p. 154.) Mr. Audubon has figured the young gerfalcon in his accurate and spirited manner, and has described it with equal fidelity.

2228. *Latham, an old writer on falconry*, is warm in his commendation of the gerfalcon, which he affirms to be when reclaimed (but which requires much time and trouble) of a most obedient and even affectionate disposition; in proof of which, he relates the following instance: — "I myselle did know one jer-faulcon that was as good as did flie to the hearne neuer the lesse whensoever she did pull downe any one, her loue was so exceeding great to her keeper, that as he did come into the fall, before the hearne was dead, she would presently forsake the quarry, and flie to him for reward, which he continually with great care and skill had given and used her unto at her first making; so would he do also, although she had killed it and taken hold thereon." Blome is also lavish in his praise of the gerfalcon for her hawking qualities, both for land and river. Of her appearance, he says, "She is a stately bird to behold, and most fit for princes and persons of quality."

SUBJECT. 2. *The Peregrine Falcon.*

2229. *The peregrine falcon* (*F. peregrinus* Linn.), and the common falcon (*F. communis* Linn.) are, by modern naturalists, considered as the same individual bird, but disguised by annual variations of plumage. As its name implies, this is one of the migratory hawks; and it is that particular one which Cuvier describes "as big as a fowl, and always known by a sort of triangular black spot on the cheek," &c. (See *Animal Kingdom of Cuvier*, by Griffith, vol. vi. p. 24.) The slight falcon, which is the usual name by which falconers know the peregrine or migratory hawk, is one of the most important agents in the falconry of the

present day. We shall not therefore be blamed for somewhat extending our notices relative to its qualities, characteristics, &c. Fortunately the veil which has so long hung over its history, has been almost torn away by the indefatigable exertions of modern naturalists, in which M. Beckstein and Professor Wilson of Edinburgh have particularly distinguished themselves. Every one interested with regard to these disputed tribes, should have recourse to the admirable paper of the latter gentleman on the subject, which appeared some years ago in the *Memoirs of the Wernerian Society*. To Mr. Macgillivray we are also much indebted for his work, entitled *Descriptions of the Rapacious Birds*, which tends still further to bring them before us in their true form and characters. As regards this particular falcon it is well observed by Mr. Bennett, that it is not surprising that it should, at different ages, have been regarded as so many distinct species by those who had no opportunity of watching the progress of its growth. "At every successive change," observes this ingenious naturalist, "the plumage undergoes a fresh modification, not in colour alone, but even in the distribution of the markings. It is only after the first moulting that it assumes any thing like permanence of character, and at each successive moulting afterwards there is no apparent change. In the first year it is generally of a light brown on the upper parts, with an ash-coloured tinge on the middle of the feathers. Its head and neck are whitish, with a tinge of red, and numerous dark brown spots; its throat and under parts dirty white, with longitudinal spots of brown; its cere bluish horn colour, and its legs yellow. As it advances in age the upper parts become greyish brown, with lighter transverse bars. This conversion takes place in a gradual manner, and affords a certain means of distinguishing the young from the adult bird, not only in the present species, but throughout the whole of the hawk and falcon tribes. At the same time there is developed in the peregrine falcon a character which is not very distinct in the young bird, and is somewhat more faintly marked in the female than in the male, but which may be regarded as one of the best diagnostics of the species. It consists in a broad black streak, passing downwards obliquely over the cheeks from the inner angle of the eye, and giving to the bird a very peculiar expression of countenance. When perfectly full grown, the beak is lead-coloured with a dark tip; the cere has a greenish tinge, and the irides are yellow. The upper parts of the head and neck are bluish black; the black has a lighter tinge of lead-colour, crossed by scarcely perceptible blackish bars; and the black whiskers are strongly developed. The quill feathers of the wings and tail are of a dusky black; the latter crossed by numerous ash-coloured bars, and yellowish white at the tip. This last character is, according to M. Savigny, uniformly indicative of the species in all its stages. All the under parts are white; a series of transverse brownish bars commence on the lower part of the breast, and extend to the tail; the upper part of the breast is marked by a few longitudinal streaks; but the throat is entirely free." (*Zoological Gardens*, vol. ii. p. 117.)

2230. The male peregrine falcon (fig. 337.), distinguished by falconers from the female by the term tiercel, tercel, or tassel, is thus described by Mr. Macgillivray:—

"Form full and robust, its neck rather short, its head large and round. The bill is shortish, thick, and strong; the upper mandible with the edges sharp, slightly inflected, with a distinct process toward the curvature, having on either side a rounded sinus, the tip triangular, descending obliquely, and acute; the lower mandible involute at the edges, the tip directly truncate, the notch distinct. The legs are robust and short; the tarsi, which are feathered more than half way down, are covered all round with reticularly arranged scales, the anterior larger, broad, and subhexagonal, the posterior small and rounded; the toes are robust, covered above with scutella, scabrous and tubercular beneath; the second and fourth toes are nearly equal, the hind toe shortest, the third longest, the third and fourth connected by a membrane at the base. On the first toe are six, on the second nine, on the third seventeen, on the fourth ten scutella. The claws strong, rounded on the ridge, rather compressed, acute, narrow, and marginate beneath." Wings very long and pointed; primary



MALE PEREGRINE FALCON.

quails of moderate breadth, attenuated towards the end; the first quill with a sinus near the

end internally, the second longest; the first a little shorter, the third nearly as long as the first; secondaries thirteen, curved inwards, broad, obtuse with an acumen. Tail about half an inch longer than the closed wings, slightly rounded, the feathers broad and rounded." (*Rapacious Birds*, p. 159.) The colours and markings of the male peregrine falcon are also critically described by our author as follows:—"The bill is blackish blue at the tip, pale blue at the base; the cere oil-green; the bare orbital space orange; the irides dark hazel; the feet lemon-yellow; the claws brownish black. The head, and hind parts and sides of the neck, are greyish black tinged with blue; the rest of the upper parts deep bluish grey, gradually fading into ash-grey behind; the feathers of the back wing-coverts, and upper tail-coverts, all more or less distinctively barred with greyish black. The quills are blackish brown, their inner webs marked with transverse elliptical spots of reddish white. The tail is marked with about twelve bars of blackish brown, the last of which is broad, the rest diminishing in size and intensity of tint, the intervals light bluish grey, the tips brownish white. The throat and fore-neck are white, a broad band of a blackish hue from the angle of the mouth downwards; the cheeks whitish grey; the breast white, with longitudinal lines and triangular spots; the sides ash-grey, longitudinally lined and transversely banded; the tibial feathers ash-grey, transversely banded, as well as the abdominal feathers and lower tail-coverts. The bars on the feathers of the lower parts vary from two to seven, those on the fore-part of the breast having two, on the sides five, some of lower tail-coverts six, the axillary feathers seven. The lower wing-coverts whitish and transversely barred." (P. 161.) The dimensions of the male peregrine are set out with equal precision. It will suffice our purpose to observe, that it measures in length, from the head to end of tail, sixteen inches and a half; to end of wings sixteen; extent of wings thirty-six inches; but it must be observed that he is occasionally seen larger.

2231. *The female peregrine falcon* is more highly prized by many practical falconers than the male, and is by some of them for supereminence exclusively called *the falcon*. Others of this fraternity, on the contrary, will not allow such superiority to be at all considerable between the female and the male, either in size, strength, or daring. In fact, the mutations in plumage in both are so great from year to year, as to make a ready distinction between them somewhat difficult to the practical falconer, as well as to the naturalist also. Contrary, likewise, to the nature of predacious birds in general, in the peregrine neither the size of the sexes nor their plumage, particularly the latter, differ very much. Consequently, the falconer is by no means averse from employing the male peregrine, although, when both are before him, he usually prefers the female. Her dimensions are twenty-one inches and a half to the end of the tail; to the end of the wings thirty inches and three-quarters. Were these stated dimensions of the female peregrine, and those above quoted of the male bird, uniformly as there laid down, then we should not wonder at the great preference among practical falconers shown for the female; but having seen breeding specimens of both on the southern coast of our country, we feel assured that such disproportion is not uniform. It is a supposition, not only among naturalists, but also among falconers, that the lanner and female peregrine are identities; such are the mystifications attendant on the subject. In tintings and markings Mr. Macgillivray says, the male varies but slightly; age, however, renders the spots and bars smaller, and it more decidedly increases the ashen grey of the hinder parts. The females vary rather more than the males, by changing from a greyish brown to a brownish grey. Their lower parts are generally of a lightish brown, and altogether their markings may be said to be usually larger than those of the male. The peregrine falcon, it may be well to state, is extensively, though not universally, distributed. It is found in most mountainous and rocky situations throughout the temperate and colder parts of Europe; it is also common in North America and in New Holland. Its migratory character, we believe, to be only fully developed in cold countries: with us there is reason to consider it as stationary, or at least its migrations are not uniform. As a British resident, we are convinced that it is much more extensively distributed than is commonly supposed; and from our own experience we agree with the learned editor of the last edition of *Montague's Ornithological Dictionary*, that there is not a spot on any part of our coast, from north to south, where the cliffs rise to the height of three or four hundred feet, but they are scattered on during the breeding seasons, and from which they seldom wholly retire, although they force their young, when fully fledged, to seek fresh quarters. We of our own knowledge can affirm, that they breed every year on the rocky precipices on the south of the Isle of Wight; and if we mistake not, Mr. Joseph Squire, of Yarmouth, Isle of Wight, has one or more which have been taken as eyasses from thence. They are not uncommon in the Shetland and Orkney Islands, and are seen on the cliffs of the Hebrides. Throughout the Scotch coasts, particularly on the eastern rocky precipices, they breed annually. Sir William Jardine also notices the vale of Moffat in Dumfriesshire, and the confines of Selkirkshire, as favourite stations. Pennant was witness to their existence in Wales, and he particularises the rock of Llandedno in Caernarvonshire as supplying a very favourite spot for the nidification of peregrine falcons. It is further insinuated, that the breed produced here was, in the falconer's phraseology, of "a generous kind,"

i. e. excellent at plunder and destruction, which character is borne out by a letter extant in the Gladdaeth Library, from the Lord-treasurer Burleigh to an ancestor of Sir Roger Mostyn, in which his lordship thanks him for a present of a fine cast of *hawks* taken on these rocks which belong to his family. Sir John Sebright observes, that "Slight falcons take up their abode every year, from October to November, until the spring, upon Westminster Abbey, and upon other churches in the metropolis: this is well known to the London pigeon-fanciers, from the great havoc they make in their flight." We ourselves know that one was killed within the limits of the metropolis in 1837. The lanner and lannaret (*F. lannarius* Linn.) of bird fanciers, we repeat, are without doubt the male and female peregrine falcon, although described by Linnæus as distinct species.

2232. *The action of the peregrine falcon is thus described by Mr. Macgillivray:—*"Its direct flight is extremely rapid, is performed by quick beats of the wing, and is very similar to that of the rock pigeon. When proceeding in haste from its breeding place, or roosting station, towards a distant part of the country, it very seldom sails, or moves forward at intervals with extended wings; but when sauntering, as it were, about its retreat, it employs both modes of flight, as it also does, in common with many other hawks, when searching for prey. Yet it is hardly ever seen to float, or sail along in circles, as eagles, buzzards, and harriers are wont to do, but performs its short gyrations as if in haste, and the moment an opportunity occurs, comes down upon its prey, either in a curved sweep, or like a stone falling from the air." (P. 164.) In the choice of its food this author hints, that it shows a decided predilection for wild game, seldom regaling on the feathered produce of the farmyard. It riots among the moor-fowl; and as a proof of its vast powers, the keeper of the Bass Rock informed Mr. Macgillivray, that he had found an entire blackcock in the nest of this falcon, with which it is probable he must have flown some miles. From the remnants left around their nests, it appears that grouse, partridges, plovers, ducks, auks, guillemots, and the smaller varieties of the gull breeds, form their principal prey. But although they will strike at rabbits and hares, they are unable to kill them, unless very young. A peregrine cannot carry a blackcock; so that the keeper's story to Mr. Macgillivray is at least doubtful.

2233. *The daring of the peregrine falcon* equals, if it do not surpass, that of most other of the falcon tribe. "A female in Colonel Montague's possession, which had never enjoyed its native habits of destruction, having been taken before she could fly, and had never been much used to slaughter, except with an occasional small bird, was suffered to be a whole day without food, at the expiration of which an old male heron was introduced into the room where the falcon was at liberty, the point of the heron's bill having been previously sawed off. As soon as the heron was in motion, the falcon, who was also deprived of the means of flight, took post on a stool which was at one end of the room; and as the heron, regardless of his enemy, traversed the apartment, the falcon motionless kept her eyes fixed on her destined prey, till, after several turns round the room, she judged the heron was sufficiently near to effect her purpose, when she sprang at the head, intending to seize that part with her talons. In this, however, she failed, the stool not having given her sufficient elevation to reach the high-erected head of the heron. This failure might probably have cost the falcon her life, had the bill of her antagonist been perfect; for she received a blow on the body that must otherwise have inflicted a severe, if not a mortal, wound, from so pointed an instrument, urged with such power. Baffled in this attempt, and having received a severe blow, it was conjectured no further attack would be made until the calls of hunger became more urgent. The falcon, however, soon regained her station; and it was not long before we perceived the heron, regardless of his foe, again pass very near, when the falcon, in a second attempt to seize her prey as before, was equally foiled, and again received a severe check from the bill of the heron. Finding her efforts had failed for want of the advantage nature had assigned her, instinct directed the falcon to a box that stood on the opposite side of the room, which was somewhat higher. Here she again seemed to meditate another attack, by watching every motion of the heron, who continued his rounds with a view to make his escape; and it was not long before an opportunity offered for falco to make an assault from her more elevated station. Here she found an humble substitute for those powers with which nature had so amply furnished her, but of which she had been deprived, and at last succeeded in springing from her perch, and seizing the unfortunate heron by the head and upper part of the neck with her talons, which instantly brought him to the ground. Now the unequal contest was soon determined; for in vain did the superior weight and strength of the heron drag and flounder with his enemy across the floor; in vain did he flap his unwieldy pinions to shake off the tyrant of the air; nor could even his gigantic legs force her from the bloody grasp; her work was short and certain; no efforts could compel her now to quit her deadly gripe; the powerful and only dreaded arms of her antagonist were secured, and, thus disarmed, he became a sure and easy prey. Scarcely was the gigantic bird prostrate on the ground, than death ensued; for in this noble race, destined for blood and slaughter, torture makes no part of its nature; but, like what we are told of the generous lion, exulting in death but disdaining cruelty, in less than half a minute did

the falcon tear out the gullet and windpipe of the heron, and regale on the head and neck." (*Montague's Ornithological Dictionary*, 2d edit. p. 360.) Colonel Thornton asserts that in his hawking career he could never obtain a tiercel (male) that would fly at ducks, but from Hambleton in Yorkshire, although he had tried many others. The female peregrine, he observes, is a match for herons and geese, and will also stoop at lesser game equally well; and that where perseverance is necessary, she excels the tiercel or male.

2234. *This falcon was also known as the haggard falcon* of most of the older falconers, and was with Latham the chief of all falcons. Turberville ranks her as the second only in importance; but it must be noted that he does this under an impression that the slight, or peregrine falcon, and Latham's favourite, known to Latham as the haggard falcon, are distinct species, which there is every reason to believe is not the case. This continual arbitrary application of names by the old falconers, produced by a confined knowledge of zoology, has much of it descended to the moderns also, among whom it tends as greatly to confuse the critical definitions of individuals, as the periodical mutations of the birds themselves. Blome's description of this bird is to the following effect:—"The falcon, or slight falcon, is of several shapes, viz. some large, some small, others long shaped, and some round trust; so are they also of several mailes, as white, black, brown, and russet. The principal sorts of falcons are by all agreed to be the intermixed haggard and the lentiner falcon, now much in use. Those that are excellent are thus shaped: viz. broad-shouldered, carrying her breadth down to her train wide and strong, with short arms and a large foot, a short beak and a large nare and close plumed, high thighs with white on the insides, great full black eyes, a large breast, her head plumed dark, or black, with a white wreath. In her flight she is known from another hawk by her nimble and quick getting up to her place, by her strong stirring, and by her skill in her stooping, and killing her game. She is very bold and hardy, of a great strength and courage to endure both wind and weather, gaining her prey by main wing, and into what place she cometh she is victor. By nature she is very hot, and consequently the better able to endure cold weather, witness her high soaring in the air; and likewise when once she begins to cast her feathers, she moweth with more expedition. Her greatest fault is, she is more difficult to be reclaimed than any other hawk. From this bird the falconer is said to derive his name, as well as the art itself; for that it seems the chief end of a falconer, and the art of falconry is rightly to reclaim and man the falcon; for she fleeth at all games, both at field and river, but most proper for the river; so that he that thoroughly understands how to bring the falcon to that perfection that she is capable of, may well deserve the name of a master of this art. This hawk is a great pains-taker, no weather discouraging her from her game, if possible to be found; and altogether she hath laboured two or three days together in ill weather, yet she will not be tired; and indeed every hawk requireth exercise. But old staunch hawks should have more rest." (*Gentleman's Recreations*, p. 29.)

2235. *Importations of the slight falcon* are annually made from the open grounds around Faleonswaard for the use of British falconers in flying herons, in lieu of the gerfalcon, which is more expensive and difficult to obtain.

SUBJECT. 3. *The Lanner and Sacre.*

2236. *The lanner and lanneret, the sacre and sackerel*, as disputed identities of the peregrine falcon, we have thus brought under one heading.

2237. *The lanner* (*F. lannarius* Linn.). Notwithstanding this bird has been described by Linnæus, Willoughby, Ray, Temminck, Montague, Cuvier, Fleming, and other eminent naturalists, as a distinct individual hawk, there are other most respectable authorities, who, by omitting it in their lists of the raptorial birds, tacitly deny its existence as such. Among these dissentients we may particularly notice Selby, Vigors, and Macgillivray. Sir John Sebright, also, who is not apt to form an opinion without sufficient grounds, is a great sceptic as to the existence of this bird as a distinct falcon, observing that he never himself saw either a lanner, or lanneret, in any collection to which he had access; neither had he ever met with any falconer who had seen either. Linnæus, however, enumerates three varieties of it, and then sums up the account by stating, that it is of the size of a buzzard; that it migrates; builds its nest in low trees, and is much esteemed in falconry. A specimen has been lately procured from the north of Africa by the Duke of Leeds, proving it a distinct hawk. Cuvier describes it thus:—"Wings two-thirds as long as the tail; middle toe shorter than the tarsus; mustaches very narrow; feet bluish; two first quills notched at the end. Inhabits the north of Europe. Length one foot and a half." Fleming says the head of the female is dark brown, and the throat and under tail-coverts have narrow streaks. Bewick tells us that it is not common in England, but that it breeds in Ireland, and is frequent in various parts of Europe. This writer also observes, that it derives its name from the mode of tearing its prey into small pieces with its bill. Pennant, in his *British Zoology*, both describes and figures a bird which "was communicated to him by the name of lanner, that had been taken in a decoy in Lincolnshire; and which, from the

description given of it, corresponds with the principal characters attributed to it by other naturalists. Belon, also, describes this falcon as common in France in his time. Buffon, on the contrary, insinuates that if such were the case, it must have become extinct, or otherwise so scarce as to have escaped notice of late years.

2238. *The lanner's existence as a British bird therefore*, at the present time, may be considered as somewhat doubtful. Shaw, we think, concludes his account of this bird wisely, although he leaves the matter equally uncertain: — "After all these descriptions, one would be inclined to suppose this bird entitled to the rank it has hitherto maintained in ornithological writings. I am informed, however, on seemingly good authority, that the lanner, so often considered as a distinct species both by falconers and naturalists, is in reality no other than the peregrine falcon in its first or second year, and before it has arrived at its full and genuine plumage. It is for this reason that I venture to assign it the place it occupies in the present work; though, at the same time, I must beg to be understood as being by no means perfectly convinced of the truth of this supposition. The chief objection seems to be the colour of the feet, which are blue, not yellow as in the peregrine. Some have supposed both the lanner and the sacre to be varieties of the ger-falcon." (Vol. vii. p. 131.)

2239. *The sacre and sackerel (Sacer Linn.)* are names met with in all the olden lists of hawks, and these equivocal gentry have the authority of Linnaeus for their pretensions. The researches of subsequent naturalists have, however, rendered the existence of the sacre, as a distinct species, more than doubtful: on the contrary, there is every reason to consider the object so denominated, to be neither more nor less than the peregrine falcon of a certain age. This view is rendered the more probable, as the name *sacre* implies a particular brown hue, which exactly corresponds with the colour of the plumage assumed by the peregrine, after one of its important moultings.

SUBJECT. 4. *The Hobby.*

2240 *The hobby (F. subbuteo Linn.)* is a long winged hawk (*fig. 338.*), and though small in bulk, his length of wings and the form of his beak and talons rank him high in the list of the naturalist and falconer. He is thus described: length, twelve inches; spread of

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wing, twenty-six; tail, five and three-quarters, rather rounded, and furnished with twelve broad acuminate feathers. The tips of the wings, which reach beyond the extremity of the tail, are narrow and rather pointed towards the extremity; the first primary is notched out on the inner web, and is but little shorter than the second, which has its outer web slightly cut out. "The bill is blue; cere and orbits of the eyes, yellow; irides, orange; a light coloured streak passes over each eye; the top of the head and back are bluish black; wing-coverts the same, but in some are edged with rust colour; the hinder part of the neck is marked with two pale yellow spots; a black mark from behind each eye, pointing forward, is extended down on the neck; the breast and belly are pale, marked with dusky streaks; the thighs rusty, with long dusky streaks; wings brown; the two

middle tail feathers deep dove-colour, the others barred with rusty, and tipped with white; the legs and feet are yellow. The female is larger than the male, which in the falconer's vocabulary is her jack or robin. Her length is thirteen inches; extent of wings twenty-eight; bill and feet the same colour as the male; feathers of head margined with brown; throat and neck white; hinder part of neck of a brownish white; breast and belly reddish white, striped with brown; the spots on her breast more conspicuous than those of the male. The hobby breeds with us, lays three or four bluish white eggs, irregularly spotted with grey and olive, and is said to emigrate in October. It was, we are told, formerly used in the taking of larks and other small birds, in the following singular manner, known by the term *daring*: when the hawk was cast off, while hovering on the wing, she was sure to fix larks, and whatever small birds were there, immovably to the ground, through fear; which, thus paralysed, became an easy prey to the fowler who drew a net over them. Buffon says, 'the bobby was also regularly flown at partridges and quails.'" (*Bewick's British Birds*, p. 43.) These birds migrate in winter, and return in the

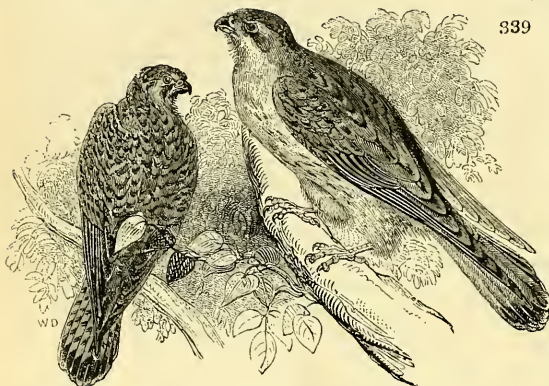
spring for the purposes of breeding. "The hobby builds its nest," says Colonel Montague, "in trees, and sometimes takes possession of a deserted crow's nest; the number of its eggs is usually four, of a bluish white, with olive-green or yellowish brown blotches. We have seen three young ones taken from a nest, which were not of so dark a colour as the old birds. Small as this species of falcon is, it is inferior to none in point of courage; while its flight is wonderfully rapid, and supported with undiminished vigour for a considerable time: it will frequently pounce upon a partridge; but its favourite game seems to be the lark, to which it is a great enemy; and it is frequently taken in pursuit of them by bird-catchers in their nets. We have often," continues the same authority, "witnessed its flight in pursuit of this bird; and it is astonishing to observe how dexterously the little creature avoids the fatal stroke until it becomes fatigued. A hobby in pursuit of a lark was joined by a hen harrier, who, not being so rapid on wing, was usually behind, and ready to avail himself of the sudden turns the unfortunate lark was compelled to make, to avoid the talons of the hobby; however, after numberless evolutions, the hen harrier relinquished, being unequal to the chase, and left the deadly stroke to one better adapted for rapid and durable flight, and aerial evolutions. The country was open, and as far as the eye could discern the chase continued, but doubtless without a chance of the lark's avoiding the fatal blow." (*Ornithological Dictionary*, 2d ed. p. 256.) The hobby, both male and female, though naturally impatient, yet, with much care and perseverance, may be trained to *wait on*, and will afford some sport, small as is their size, when flown at blackbirds, thrushes, larks, &c.

2241. *These minikin falcons were great favourites* with some of the most reputed old falconers. Blome is loud in their praise: — "This hawk," he says, "next the merlin, is the least of all hawks, yet had in good esteem, being observed to follow the falconer and dogs in the field; and when she espies any lark or other small bird, she makes at them with great courage, few escaping her. She affords very good diversion with nets and spaniels, which is thus done, — cause your dogs to range and beat about the field, to spring the larks; but the poor birds espying the hawk soaring aloft, dare not betake themselves to their wings, thinking to lie close; and so you draw the nets over them and take them. The hobby lieth indifferent well on her wings; and when she follows the spaniels as they range about, will make divers turns on them, so that when the game is sprung, she may the more advantageously stoop from her wings; and being well manned, she serves for several sorts of game. The hobby must be taught and trained in each particular like a falcon; and observe not to flee her in the heat of the day, for then she is apt to soar and be lost (although but for a time, being to be found again); but about two o'clock in the afternoon begin to flee her, and so hold on till near sunset, and longer is not good, for fear of losing her; and if you order her according to the directions given for the falcon, she will make a hawk of great delight, for you may flee her oftener, and when you can't any other. She is often made to flee the partridge at the first season of the year; also the quail, wheatear, and the like. In plain champain fields, where great and tall bushes grow, the hobby will make abundance of stoopings (which resting sometimes), and if the bushes stand at some reasonable distance, the birds will be so terrified at the sight of her, as to suffer you almost to take them up with your hand; but may easily kill them with a cross-bow. And this they will do seven or eight times, making their stoopings with rest between, so that the sport will last three or four hours. The eyass hobby is best for the mount; and I hold this way the best for reclaiming and preparing them: — you must take her out of the nest a little before she is able to stand on the side thereof; then provide some other nest on any tree in your garden or orchard, about seven or eight foot from the ground; and there at set times feed her with bits from the sharp end of a stick, and when she is able to stand stiff on her legs, and to tug hard for her meat, then teach her to come from thence by your art, in luring and calling her, though it be but a foot at first, and so by degrees, further and further, until she will come from the nest to you, as far as she can well hear you, and there must she attend on her wings until you take her in. When she is full summed, she must have her jesses, bewits, and bells, with other usual ornaments and dressings; then must she be made acquainted with the hood, and carriage on your fist all day; she must be also accustomed to men, horses, and dogs; and she must be trained with larks, which had need be let loose with a great deal of caution, that she perceive not they are let go from your hand; her first trains should be let loose in a creance of brown thread, and mounted forty or fifty foot high before you unhood her; three or four trains thus killed will be a sufficient introduction. When she is thus thoroughly made, you may flee her at the lark with advantage of the wind, and near approach, and afterwards you need not use so much care, for she will soon gain strength, and understand her business. At such times when you do not use nor flee her, you need to look after her only at feeding times, remembering to draw her by your lure and voice at least a quarter, if not half a mile from home, and there feed and leave her; for when she hath once fed, feaked, and rejoiced, she will soon find the way home to the place where she was bred and trained up. On resting days when she is gorged, you may find her in the

heat of the day flying and soaring aloft, whereby she becomes acquainted with the adjacent places." (*Gentleman's Recreations*, p. 1.) At the present day the hobby has lost amongst falconers all its pristine repute. They assert its unfitness for the purposes of falconry, maintaining that its chief food are insects. They admit that it will take a small bird "from the hand."

SUBJECT. 5. *The Kestrel.*

2242. *The kestrel, or kestril* (*F. tinnunculus* Linn.), the stone-gall, stannel-hawk, or the wind-hover, so called from its habit of hovering in the wind (*fig. 339.*). Though it is one



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of the most common of our hawks, it is yet one of the most elegant, uniting, in an eminent degree, lightness with strength in its structure. The wings, when closed, do not reach to the end of the tail by two inches. The body is ovate in shape, the bill short and strong, having the tooth-like process and medial festoon very distinct, thus gaining in one of the requisite characteristics of rank what it loses in the other. The male and female differ so considerably in plumage, that a distinct description of each is necessary. The female, according to

Montague, is considerably larger than the male, which Mr. Macgillivray denies; his measurement of a male kestrel being, "length to the end of tail thirteen inches and a half; extent of wings twenty-seven: of the female, length fourteen inches and a half; extent of wings thirty."

2243. *The male kestrel* is thus described by Bewick, from one he had in his own possession, probably, as he observes, an old one:—"Length fourteen inches; breadth two feet three inches; bill blue; cere and eyelids yellow; eyes black; forehead dull yellow; top of the head, back part of the neck and sides, as far as the points of the wings, lead colour, faintly streaked with black; the cheeks are paler, from the corner of the mouth on each side a darkish streak points downwards; back and coverts of the wings bright cinnamon brown, spotted with black; quill feathers dusky, with light edges; inside of the wings white, beautifully spotted with brown on the under coverts, and barred on all the quills, with pale ash; the under part of the body is pale rust colour, streaked and spotted with black; thighs plain; rump and upper coverts lead-blue; and the tail feathers fine blue grey, with black shafts; towards the end is a broad black bar, both on the upper part and under sides; the tips are white, legs yellow, claws black." (*British Birds*, p. 39.)

2244. "*The female kestrel*," Colonel Montague observes, "is considerably larger, and is distinguished from the other sex by the head and tail being of the same colour as the back, which is not so bright a red brown as the male; the under parts are also lighter, and the black spots not so distinct, but more in dusky streaks; the tail also is marked with transverse dusky bars, with a broad one near the end." (P. 276.) It is observed that the kestrel of both sexes varies in size and colour. In the young, the grey on the head is less clear than in the older; and as the period of moulting approaches, the plumage is less vivid—a proof, that a deciduous change of feathers is essential to the integrity of their pristine state. Mr. Macgillivray observes on a remarkable difference in the digestive organs of kestrels, which he had examined:—"Of two males and two females the œsophagus in all was four inches and a half in length; in two no cœcum; in another a mere vestige of one; and in another two very distinct cœca were found. The general length of the intestinal canal varied from twenty-two to twenty-five inches." We have ourselves observed very considerable alterations in the size and length of the different portions of this canal also in gallinaceous birds, or fowls, as popularly so called. The principal food of the kestrel is said to be field-mice, and by examining the contents of the stomach of such as have been shot, the exuviae of beetles, particularly of the *Scarabeus Stercorarius*, or dung-beetle, being found in considerable numbers, show that it is also insectivorous as well as carnivorous. Mr. Macgillivray, also, with many bones of *Glires*, the lesser *Glires* or gnawers, has found the feet and other parts of birds of various kinds in the stomach of these birds. The kestrel is also accused, in Scotland, of carrying off young chickens, which feat we have ourselves witnessed it perform, as well as

the pouncing on larks and other small birds. Mr. Macgillivray's translation of Buffon's account of the predatory habits of this bird is too interesting, and too much *à la Buffon* to be omitted: "The cresserelle," says he, "is the most common rapacious bird in most of our French provinces, and especially in Burgundy. There is not an old castle or a deserted tower, which it does not frequent and inhabit. It is particularly in the morning and evening that it is seen flying about these old buildings, and that it is heard more frequently than seen. It has a hurried cry of *pli, pli, pli*, or *pri, pri, pri*, which it incessantly repeats as it flies, and which frightens all the little birds, on which it darts like an arrow, and which it seizes with its talons. If it should happen to miss them at the first plunge, it pursues them into the houses, fearless of danger. I have more than once seen my people take a cresserelle, and the little bird which it was pursuing, by closing the window of a room, or the door of a gallery, which were more than two hundred yards distant from the old tower from which it had issued. When it has seized and carried off the bird, it kills and plucks it very neatly before eating it. It does not take so much trouble with mice, for it swallows the smaller whole, and tears the others to pieces. All the soft parts of the body of the mouse, are digested in the stomach of this bird; but the skin is rolled up so as to form a little pellet, which it voids by the mouth, and not by the intestines, for its excrements are almost liquid and whitish. On putting these pellets, which it vomits, into hot water, to soften and unravel them, you find the entire skin of the mouse, as if it had been flayed. It at first feeds the young with insects, and afterwards carries to them plenty of field-mice, which it perceives on the ground from the greatest height in the air, when it slowly wheels, and often remains stationary to spy its prey, on which it falls in a moment. It sometimes carries off a red partridge much heavier than itself; it also often catches pigeons which straggle from the flocks; but its most common prey, next to field-mice and reptiles, consists of sparrows, chaffinches, and other small birds." (*Loc. cit.* p. 202.) Though Buffon's account is interesting, it is erroneous. The kestrel never kills birds when they are on the wing. It kills them, as it does mice, whilst they are running or at rest on the ground.

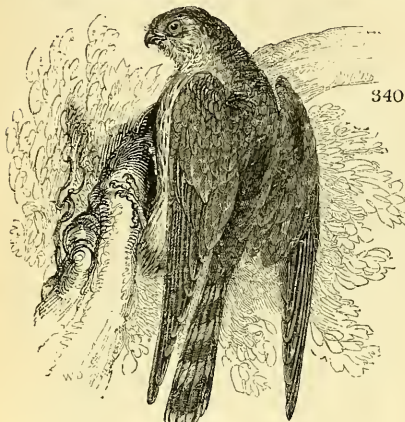
2245. *The propagation of the kestrel* is commenced about the end of the month of March; the male and female remaining together through the year. This bird may be met with in plenty through every part of Great Britain, and equally in cultivated as in wild localities. The nest it makes is simple, as it may be said to be rather laid than built in the excavations of the cliffs on sea-coasts. In more inland situations, crevices in ruins are sometimes chosen, in which a few sticks, laid without apparent method, and topped with wool, hair, or moss, serve the purpose of nidification. Cavities in trees are also not unfrequently made use of for the purpose; and, occasionally, kestrels occupy the deserted nest of one of the pie tribe. Four or five eggs are usually deposited, rather of a short, elliptical, than round form, uniform, or almost uniform, at both ends, of a pale orange colour, dotted or splashed with dirty red.

2246. *The flight of the kestrel is singular, yet graceful.* It appears like suspension in the air without effort. If steadily observed, however, a slight quivering of the wings may be noticed, which fans the air, and thus supports the bird, who at the same moment, and with little effort, fills her whole body with air. The kestrel was formerly used in Great Britain in hawking partridges and other birds of straight flight; but although it is easily reclaimed, more efficient agents have led to the discontinuance of its use. Nevertheless, some of the old writers describe it as a good *field-hawk*, and praise it for being a fast goer *afore-head*. It was used for pheasant hawking sometimes; but of course it was in the *open*, as the long winged hawks are unfit for *cover* hawking. The kestrel is found throughout Europe and the temperate parts of North America. Selby says that the kestrel hawks after cockchafers in the evening. He has seen this bird dart through a swarm of them, and seizing one in each claw, eat them while on the wing.

SUBJECT. 6. *The Merlin.*

2247. *The merlin* (*F. Æsalon* Linn.) is the smallest of the hawks, but it also is one of the most active and beautiful. Little longer than a blackbird, it can kill a partridge at a single pounce, such is its power and determination. The wings reach to within less than two inches of the tip of the tail, which is marked with alternate dusky and pale bars. The male merlin, called by the older falconers the jack of the female, as it would appear, is less rammish than most hawks. Colonel Montague tells us, that one taken in a trap-cage, into which he had entered in pursuit of a bullfinch, proved very docile; and, what was remarkable, was very fond of drinking water; and, indeed, showed signs of much distress when it was not at hand, which, it was apprehended, was occasioned by fever, as it died of inflammation of the chest. There is a quickness and general liveliness of manner in both the male and female merlin, very different from the grave deportment of the hawk tribe generally. All their movements bespeak volatility and hurried purpose; on the wing both are rapid in the extreme. In external markings the male is distinguished, according to Mr. Macgillivray, by having his upper parts tinged with a dark bluish grey, each feather

having a black central line. The lower parts of the body are of a light reddish yellow, with oblong dark brown spots. The upper part of the head is of a brownish grey, the lower part of a greyish white. The bill is of a pale blue at the base, bluish black at the end; in figure it is short and strong, its upper mandible being sharply curved from the base; the tomtia sharp anteriorly, with a slight central festoon, having the angular process character-



THE MERLIN.

istic of the genus very distinct. The lower mandible has a truncated tip and semi-circular notch directly behind it. In length the merlin ranges from ten to twelve inches; its weight about five ounces.

2248. *The female merlin* differs from the male in being somewhat larger, and somewhat differently marked and coloured. The general tinting, according to Mr. Macgillivray, of the upper parts, "is deep brown, slightly tinged with blue, each feather having a central line of black. Part of the hind-neck is yellowish white, the feathers there tipped with brown. The quills, larger coverts, and alula, have a regular series of rounded light red spots on both webs, and their tips are of the same colour but paler. On the tail are five conspicuous bars of pale reddish brown spots, and a terminal band of greyish white, the lateral feathers having two more of these light bars at the base. A yellowish line, margined beneath with blackish brown, extends over the eye. The throat and cheeks are yellowish white, the longer feathers of the latter tipped with brown; and from the angle of the mouth is a band of brown, formed by the central markings of the feathers. The lower parts in general are pale reddish yellow, marked with numerous oblong spots of brown, larger than those of the male; the abdominal feathers and lower tail-coverts nearly spotless, a single row of the latter on each side having a line of brown on each feather. The lower wing-coverts are brownish red, spotted with yellowish white; the long feathers of the leg marked with brown lines, the shorter nearly white and without markings." (*Rapacious Birds*, p. 215.) Length twelve and a half inches; extent of wings twenty-eight inches. In both male and female the legs, which are slender, are feathered before more than a third of their length, and are compressed behind, and covered with scales. The flight of the merlin, we are told by the accurate authority just quoted, "is very similar to that of the sparrow-hawk, being rapid, protracted, and devious. But it generally flies at a greater height than that bird, although you may also see it skimming over the fields or copses, and gliding along the hedges. It often captures small birds by thus coming upon them unawares; but it may as often be observed pursuing one in the open sky, and ultimately securing it, sometimes after a long chase. It perches on a stone or crag, apparently for the purpose of inspecting the neighbourhood; and from its station, should a flock of small birds come up, it fixes upon an individual, from the pursuit of which it is not drawn by the presence of others. Its prey consists of larks, chaffinches, thrushes, sand-pipers, and partridges, though very rarely. Some authors state that it also occasionally feeds on beetles and other insects; which is a habit common to all the smaller hawks, as well as most owls." (*Ibid.* p. 217.)

2249. *The merlin is by no means a common bird*; it is perhaps more frequent in Scotland than in any other part of the British dominions, where it appears to be a constant resident. It visits England in October, about the time the hobby retires; but even then it seldom penetrates further south than Cumberland, where, Dr. Latham informs us, it has been found more than once with four young ones placed on the ground: — "In the middle of a high clump of heath (*Montague's Ornithological Dictionary*, p. 321.), there were found on the Moors of Northumberland three young ones, about half-grown, but no nest. They were well concealed, and could not have been discovered but by a setting-dog making a point at them. The eggs are said to be of a plain chocolate colour, and an instance has been known of the birds depositing them in a deserted crow's nest." Cuvier states that it builds in rocks. Dr. Fleming, on the contrary, says its nidification is usually in trees or on the ground, where it lays five or six eggs of a whitish cast, except one, which has a green tinge; notwithstanding which discrepancy both writers are probably correct. Quails, blackbirds, thrushes, snipes, and larks are taken with this minikin hawk, and she has been successfully flown at partridges; we have heard, but we doubt it, woodcocks noticed as being her quarry occasionally. This hawk, when young, is reclaimed by the same methods as are used toward

the slight falcon. Blome says, "It is usual to fly a cast at a time, which is very pleasant; for the birds are so terrified at the sight of them, that they choose rather to take shelter under the horse's legs, than to rely on their wings. And a cast of merlins makes excellent sport for the snipe in the winter, being much like the flight of the hern and the gerfauleon. To order this aright, do thus: when your merlins are thoroughly manned and made gentle, carry them into the field, and having found a lark, or some small bird, make loose their hoods, and go as near as you can into the wind to the bird, and as soon as the bird riseth unhood them, and cast them off to flee, and when they have beaten down the game, let them feed thereon for their reward; at first you must flee them with the most advantage you can, that they may not be over-wrought." (P. 30.)

SECT. IV. *Goshawks, Sparrow-hawks, Kites, and Buzzards, as Preying Birds of Low Flight.*

2250. *If, after what has been stated, the practical falconer should not hold the verbal distinctions of noble, semi-noble, and ignoble falcons and hawks in much respect, he must nevertheless by no means be indifferent to those more important practical distinctions of long winged and short winged.* On a due attention to these, in a great measure, will depend his reputation as a successful falconer, as will be made apparent in the progress of our practical detail. Having just described those rapacious birds that usually strip their prey in the air, we shall now proceed to such as usually seize theirs on or near the earth.

2251. *The hawks (Autours Cuv.), formed the second division of ignoble birds in the Cuvierian classification, as the eagles formed the first.* This great naturalist observes, that, like the three last tribes of eagles, the hawks have wings shorter than the tail; but as a redeeming trait their beak bends from its base. Such are more particularly called goshawks as have the tarsi shielded, and rather short. The goshawks, sparrow-hawks, and buzzards, not only have the general length of their wings shortened, but, by having the third and fourth wing feather nearly of the same length at the same time that the second feather is rather the longest, their wings when spread have a somewhat rounded appearance, instead of a lengthened and pointed one; and which form, it is evident, must have much effect on their manner of attacking their prey. Thus they are not able to soar aloft to reach it, or pounce down on it from above, after the manner of the more noble falcons; but they take it by *raking*, that is, by seizing on it near the ground.

SUBJECT. 1. *The Goshawk.*

2252. *The common goshawk (F. palumbarius Linn.) "is the only species of this country. It is brown, with whitish eyelids: white underneath, barred across with brown in the adult;*

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THE GOSHAWK.

dotted when young; five browner bands on the tail. It equals the gerfalcon in size, but not in courage, falling always obliquely on its prey. It is, nevertheless, used in falconry for weaker game. It is common in all our hills and low mountains." (*Animal Kingdom*, vol. vi. p. 48.) Bewick's description of it is, "Length of the female from one foot ten inches to two feet, the male is a third less; the bill blue, tipped with black; cere green; eyes yellow, a whitish line passes over each eye; the head and all the upper parts are of a deep brown; each side of the neck is irregularly marked with white; the breast and belly are

white, with a number of wavy lines or bars of black; the tail long, of an ash colour, and crossed with four or five dusky bars; legs yellow; claws black; the wings are much shorter than the tail." Buffon, who brought up two young birds of this kind, a male and a female, makes the following observation:—"That the goshawk, before it has shed its feathers, that is, in its first year, is marked on the breast and belly with longitudinal brown spots; but after it has had two moultings they disappear, and their place is occupied by transverse bars, which

continue during the rest of its life." He observes further, that "Though the male was much smaller than the female, it was fiercer and more vicious. Feeds on mice and small birds, and eagerly devours raw flesh; it plucks the birds very neatly, and tears them into pieces before it eats them, but swallows the pieces entire, and frequently disgorges the hair rolled up in small pellets." Its breeding place is in trees, and sometimes in rocky excavations, laying from two to four eggs of a bluish white, with brown spots and streaks of the same. Sir John Sebright says of it, that "It is a short winged hawk, much larger than the slight falcon, from which it also differs as much in its appearance as in its manner of flying." The goshawk is occasionally bred in Scotland, but more frequently in France and Germany. It is brought into England for the use of our falconers, from Falconsvaard, and usually in a reclaimed state. Montague says, "It is not uncommon in the wild and mountainous parts of Scotland; particularly it is known to breed in the forest of Rothemurhus and on the woody banks of the Dee: goshawks are also said to be numerous in the Orkney Islands." The flight of this hawk is very rapid, but is generally low, and it usually strikes its prey near the ground, being incapable of mounting. "If its prey take refuge, it will wait patiently on a tree, or other elevation, until the game, pressed by hunger, is induced to move." Colonel Thornton informs us that he flew one at a pheasant, which retreating into cover and the hawk following it, was lost. At ten o'clock the next morning, the falconer found his goshawk, and as he caught her, the pheasant seeing its enemy secured, first ran and then rose." (*Ornithological Dictionary*, p. 222.)

2253. *The older falconers preferred the largest sized goshawks*, and those of the whitest mail to all others; and they also considered those of Norway to be the best. The goshawk, however, come from where it will, requires much management in its training, it being naturally shy, and often perverse, and is withal sometimes so fickle as to make a frequent change of treatment, according to circumstances, necessary. But when it is once thoroughly reclaimed, it usually continues mild and obedient, and even exhibits strong marks of attachment. In her training, the principal difficulty is to teach her to face men, horses, and dogs. To avoid this trouble, Belon informs us that falconers endeavoured to procure goshawks from Greece, as proving much more docile than any others. They are all, however, rather apt to be sluggish, and therefore should be early *made* to the attack of active prey. If this is not done they will confine their preying to the poultry-yard, and will kill nothing beside. To prevent this, take care to enter this hawk to strong game, such as herons, pheasants, geese, ducks, grouse, rabbits, as the case may require, or opportunity offer. It must, however, be remarked, that the goshawks, in common with other large hawks and falcons, perform best when principally flown at one quarry: also, that those trained to water hawking seldom excel on the campaign country after heath or moor fowl, or rabbits; nor will one which has been for some time flown at these latter quarry, readily take to heron hawking. If the goshawk miss her prey, and more particularly if she be at all disturbed by the presence of dogs, or by much noise, she will be apt to *take pet*, and obstinately fix herself on a tree, from whence she can only be recovered by being allowed to *plume on a train-partridge* (*i. e.* one brought to the field in a wicker cage or bag); this being loosened, flown at, and killed, she must be allowed to feed on it, which will revive her courage, and serve to excite her in her next trial. To prevent these hawks from taking to poultry, which they are very prone to, the older falconers accustomed them to be placed under restraint in the midst of a poultry-yard, by which, becoming acquainted with the usual feathered inhabitants, they by degrees regarded them as associates, and thus lost the habit of injuring them; and, consequently, they were the more ready to choose other quarry.

2254. *The goshawk intended for pheasant hawking*, requires to be particularly *trained to cover*, which is done by taking her into a wood when sharp-set in her stomach. Now, having placed her on a bough, and being retired to some distance, but within her sight, call her, and, having *fisted* her, reward her with a little of any meat she is known to be fond of: repeat the same three or four times, at each time rewarding her. For wood hawking she must be singularly well accustomed to dogs; on which head we beg to offer a hint not usually given in any practical hawking directions, which is, that the dogs used should be equally well trained, to fit them to hunt with the larger falcons and hawks, as the hawks themselves. While the spaniels may be familiar, they should be taught to keep at a certain distance, and not to crowd around the hawk in hopes of sharing the edibles brought to reward her: they must, on the contrary, keep completely aloof. The French falconers do not seem to hold the goshawk difficult to reclaim; they however acknowledge, that, for a few days after she is captured, she bates much; but though she does not become quite tractable so soon as some hawks, she will, under good management, by the fifth or sixth day take the food that is offered to her; having once done this, she will soon be ready to spring on the hand held out to her. Mr. Griffith describes the French methods employed in *manning* and *reclaiming* the goshawk thus:—"At the end of eight days, having bathed the goshawk in the morning, they lure him in the evening with a cord, several times, at eight, ten, and twelve paces distance, and the following day at twenty and thirty; after which they leave him at liberty to attack a pigeon fastened to a stake; when he has taken this bird

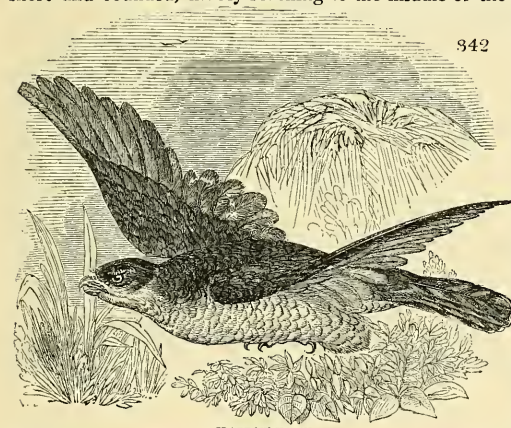
by the head, they pull away the body, and hold it in the hand, so that, when the goshawk has eaten the head, he jumps upon the hand to devour the rest. In the afternoon of the same day they call him back, from greater and greater distances in the woods; and if he returns readily, they can employ him the following day in the chase, having first carried him for some time on the hand. But if he is designed for any other chase than that of partridges and rabbits, to which he is instinctively prone, it is necessary to habituate him to the particular game, like the falcon and gerfalcon, by means of *lures*." (*Animal Kingdom*, vol. vi. p. 217.) We fear, however, the process, to be effective, is more complex and operose than it is here stated. These hawks fly low and very fast for 200 yards. If they do not soon take their quarry they give in. They are able to overtake rabbits, but not hares.

2255. *The goshawk* is taken in various ways, as we shall notice hereafter; one method, marked by its simplicity, is that of inclosing a pigeon within the nets used for taking larks, on which the goshawk precipitating himself, either gets hampered in the net, or, otherwise, intent on dismembering his prey, suffers himself to be secured.

SUBJECT. 2. *The Sparrow-hawk.*

2256. *The sparrow-hawk* (*F. nivalis* Linn.). Montague describes the male as being five ounces in weight and the female nine, so great is the disparity between the sexes in this species. In length the former is twelve inches, the latter fifteen; bill bluish, cere yellow, irides orange-yellow, and furnished with bristles at the base, the orbit offering an unusual protecting projection. The plumage of both sexes is somewhat variable, being sometimes of a deep bluish grey, and at others inclines to a brown tinge edged with ferruginous markings. The breast of the male is of a rust colour; that of the female approaches to white. On the back of the head, both male and female present a broken patch of white, which tends to characterise this species particularly.

2257. *The sparrow-hawk is a familiar type of the true hawks.* The wings of this bird are short and rounded, hardly reaching to the middle of the tail, which however is long. In



SPARROW-HAWK.

form it is slender, but elegant. Its flight, when in pursuit of prey, is rapid in the extreme; but when searching for food, Mr. Macgillivray observes, "it moves along gently and silently, with easy flappings, alternating with short sailings or glidings, its head retracted, its tail extended and slightly spread. It often stops, hovers over some spot in a field, supporting itself in the air by a quick but gentle motion of the wings, then moves onward a hundred yards or so, and again stops to survey the subjacent objects, sometimes remaining for a considerable time almost motionless. On some occasions it will perch on a stump, tree, or wall, patiently

explore the neighbourhood for a while, until, finding its search vain, it will fly off; or, observing a bird, will glide rapidly towards it, and secure it in an instant." (P. 246.)

2258. *As a hawker*, Willoughby informs us that this bird was used to be trained to the sport, and Bellonius, also, details a common and familiar way of taking these hawks about the strait of Propontis, in these words: — "Not far distant," saith he, "from the outlet of the Euxine Sea, at the entrance of the straight leading to the Propontis, having climbed up a very high hill that is there, by chance we found a fowler on the top, intent upon catching sparrow-hawks. Whereas it was now past mid April, at which time all sorts of birds are wont to be very busie in building their nests, or breeding, it seemed to us wonderful, strange, and unusual, to see such a multitude of kites and hawks coming flying from the right side of the sea. This fowler did with such industry and dexterity lay wait for them, that not so much as one escaped him. He took at least twelve hawks every hour. The manner thus: He himself laid hid behind a little bushet, before which he had levelled a square plat or floor, about two paces long and broad, being two or three paces distant from the bushet; in the borders of this floor he had pitched down, or thrust into the ground, six stakes, at due distances, of about the thickness of one's thumb [the word is *pollicis*, and may possibly signify an inch thick], of a man's height, two on each side. On the top of each, on that side which respected the floor, was a nick cut in, upon which was

hung a net made of fine green thread. In the middle of the floor stood a stake a cubit high, to the top of which a cord was bound, which reached as far as the fowler, who lay behind the bushet. To this same line, lying loose, were many little birds fastened, which picked up grains of corn on the floor. Now, when the fowler saw a hawk coming from afar off from the sea-coast, shaking the line, he made these birds to flicker up and down; which the sparrow-hawks (as they are notably long sighted) espying at least half a league off, came flying full speed, and rushed upon the nets with that force to strike at the birds, that, being entangled, were taken. The hawks being allured into the nets, and caught by this artifice, the fowler thrusts their whole wings up to the shoulders into certain linnen clothes, sewn up for that purpose, which our falconers call *mayling* or *trussing* of hawks. Thus *mayled*, or *trussed* up, he left them on the ground, so unable to help themselves, that they could not stir, nor struggle, much less disengage or deliver themselves. No man could easily imagine whence such a multitude of sparrow-hawks should come, for in two hours' time that we were spectators of that sport, we saw more than thirty taken by this deceit, whence one may conjecture that one fowler, in the space of one day, might take more than a hundred." These hawks do not usually stay so long in one place as falcons, but are often changing place; whence it is more difficult to take them with a net, for they will not readily give a fowler time to spread a net over them, unless they be deceived in that manner Bellonius hath set down.

2259. *The sparrow-hawk* may be taught to fly at partridges, landrails, quails, and all the smaller birds; and as she is very industrious and not intractable, it is to be wondered that, so easily as she may be procured, she is not used more. Perhaps it is because she will not follow birds high into the air. As a short winged hawk, she is reclaimed and manned after the manner of the goshawk, which she so much resembles. To prevent her being balked at her first essay at partridges, enter her either to a young one, or otherwise to one *shortened*, i. e. with one wing, or both wings clipped. Blome says, "When you enter your sparrow-hawk, hold your left hand aloft, that she may the better watch both the spaniels and prey: you must give her some small reward after every flight, especially if she kill; and if at first entering she miss, be sure to have some young partridge or bird in your bag for her to kill. After she is well entered and noussled, then hold down your fist, whereas formerly you held it up. You should likewise be sure to let your spaniels range near together, and on your right hand, that she may the better discern her game, and flee to the most advantage; for which purpose you should be as near the dogs as possible, and carry your hand low, that she may not bear at the game before they spring. He that is not quick at sight, and nimble of hand with his sparrow-hawk, shall soon spoil her; but, with care and due attendance, there are few hawks of more pleasure, for you may flee her at such times of the year as you can't the goshawk. Her keeping ought to be delicate, and in regard she is so small and weak, be sure to keep her high and lusty, yet with due regard to the preparation of her stomach, before you take the field with her. She will kill, according to the several seasons, diversity of game. She generally delights to flee close to the ground, and will stoutly attack the lapwing, ringdove, jay, magpie, blackbird, and the like game, and she may be made to hold out all the summer. You should flee her from the hood, and not let her spend her little strength, and disorder herself by unruly bateing, which happens by being carried bare." Both the goshawk and sparrow-hawk, be it remembered, must come to the field *sharp-set*. The short winged hawks do not *fly* for *flying* sake, nor fight like the gerfalcon and slight falcon with the hern for the very love of fighting; they, on the contrary, must be stimulated by hunger to make them fierce.

SECT. V. *Kites, Buzzards, Harriers, &c.*

2260. *The kite*, of which we have one British species only, is allowed by modern naturalists to remain undisturbed in his ornithological station. The buzzards, on the contrary, have been subdivided by them; the honey-buzzard being ranked under the genus *Pernis*, and, of the remainder, the genus *Circus* claims all, except the individuals known as the common and the rough legged. As regards the practical part of our subject, as a treatise on falconry, it is of little consequence how this matter is viewed; for the buzzards, though not entirely unknown as hawking agents, yet are very little relied on, except to be *flown* at by other falcons and hawks. As, however, it has been supposed, that their vision is somewhat indistinct in the full day, it has suggested itself to us as a query, whether, if such be the case, and their hawking ardour, *con amore*, being damped by the circumstance, they might not be advantageously trained to fly at birds of evening flight, as wild ducks, owls, the goat-sucker or night-hawk, &c. &c.? This being however only a suggestion, they will employ little more of our notice than will suffice to characterise each variety, should the falconer essay such quarry; and further, as it will enable us to demonstrate each link in the chain of the rapacious birds. With the kite something more is demanded from us, for kite-hawking has long been very popular among falconers; we shall therefore at once proceed to some further notice of him.

SUBSECT. 1. *The Kite.*

2261. *The kite* (*F. Milvus* Linn.), provincially called fork-tailed glead, or buttock, notwithstanding it ranks low in the falconer's list, is yet an object of admiration to the naturalist, and indeed to every common observer.

2262. Although the female weighs less than three pounds usually, yet her wings extend beyond five feet. "The male," according to Colonel Montague, "weighs about two pounds six ounces; length two feet two inches. The bill yellowish, point dusky; cere yellow, irides the same, but of a light colour. Head grey, streaked down the middle of each feather with dusky; back and wing-coverts dusky, edged with ferruginous; the under parts more or less ferruginous, streaked with dusky, lightest on the breast; quill feathers dusky black, from the fifth to the tenth dashed with ash colour with a few dusky bars, and white at the base and on the inner webs, the rest are dusky, with obscure bars; the tail is of a bright ferruginous colour, the two exterior feathers dusky on the outer webs, the first barred on the inner web the same; the legs are yellow; claws black. The tail of this bird at once distinguishes it from all others of the genus, being much forked; the exterior feathers are twelve inches in length. The female is somewhat larger, measuring in length two feet four inches, breadth five feet six inches; in colour much resembling the other sex, but in general not so ferruginous."



THE KITE.

(*Ornithological Dictionary*, p. 28.) We must, however, observe, that the kite varies much by age, more so than is generally known.

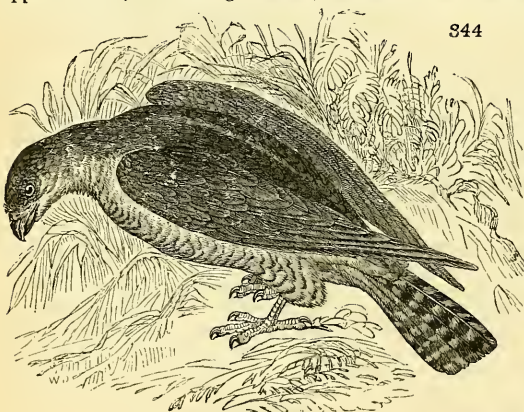
2262. *Of its habits we may remark*, that though common in some parts, it is scarce in others. It is more frequent in wooded than campaign countries; it seems, however, somewhat of a rover, as we have known a pair to have been seen almost daily, and then to be altogether missed for some months. In some parts of Scotland it is frequently met with, in others not at all. Mr. Macgillivray says, "I have observed it in the counties of Aberdeen, Stirling, and Argyle; but in the Hebrides, and in the southern division of Scotland, I have never met with it. As a proof of its rarity in the latter districts, I know of only one specimen that came through the hands of the bird-stuffers in Edinburgh in the course of eight years." (P. 277.) Though not worthy the trouble of training to hawk at command, "in the neighbourhood of Hastings, a servant girl was alarmed by an unusual uproar among the poultry; and on looking out, she saw a large bird hovering close to the window over some coops, where several broods of ducks and chickens were kept. She accordingly sallied forth to drive the bird away; but he took so little notice of her, that she snatched up a broom, and actually knocked him down and killed him. It proved to be a kite, which had probably a nest in the neighbouring wood. A circumstance similar to that just related, we witnessed in one of this species, that afforded us no small entertainment:—A poor woman was washing some entrails in a stream of water, part of which extended a few yards out of the basket placed in the water; the hungry bird had long been hovering over, viewing with anxious eye so delicious a bait, and took the opportunity of actually pouncing upon and carrying off a part, in spite of all the woman's efforts with hands and tongue, the latter of which might have alarmed a more powerful enemy. In addition to these remarkable circumstances in the biography of this noble bird, we remember an instance of two males, in the spring of the year, being so intent in combat, that they both fell to the ground, holding firmly by each other's talons, and actually suffered themselves to be killed by a woodman who was close by, and who demolished both with his bill-hook. In England it is chiefly observed in the more wooded districts, where timber trees abound; it is also common in the eastern parts, but is rare in the north, and even more so in the west; for in twelve years' residence in Devonshire, we never observed but one in the southern district of that county." (*Ornithological Dictionary*, p. 283.) The kite, it may be perceived, is by no means very choice in its food, being ready, when living prey is not at hand, to satisfy the cravings of its nature with reptiles, worms, and any garbage or offal that may fall in its way. Nor is it inapt at such times to attack the young lambs, though hares, rabbits, grouse, partridges, and domestic fowls of all kinds are the usual objects of its choice. In truth the kite is by no means an epicure, and therefore will put up with coarse food rather than none.

2263. *The flight of the kite is peculiar*, and is thus descriptively noticed by Buffon:—"One cannot but admire the manner in which its flight is performed; his long and narrow wings seem immovable; it is his tail that seems to direct all his evolutions, and he moves it continually; he rises without effort, comes down as if he were sliding along an inclined plane; he seems rather to swim than to fly; he darts forward, slackens his speed, stops, and remains suspended or fixed in the same place for whole hours, without exhibiting the smallest motion of his wings."

2264. *The spring is the season for the propagation of kites*, who usually build their nest in the fork of some large tree. Pieces of wood crossed with twigs are surmounted by moss, feathers, wool, and hair, so as to make a more comfortable place for nidification than is usual with the large raptorial birds. Our information was gained from an old gamekeeper, who professed to have examined three or four "glead nestesses," as he termed them. The kite would appear, from Shaw's account, to have been very plentiful formerly;—"In the days of King Henry the Eighth, as appears from the observations of the celebrated Clusius (L'Ecluse), the British metropolis itself swarmed with kites, which were attracted by the various kinds of offal thrown into the streets, and were so fearless as to take their prey in the midst of the greatest crowds, it being forbidden to kill them. Thus the kite was as much revered in the streets of London in those times, as the vulture is at present in those of Grand Cairo or Alexandria. The descent of a kite at the present day in Cheapside or Charing Cross, would probably attract as sudden a crowd as any other unexpected phenomenon, and would doubtless be recorded in the public prints as an event of singular curiosity." (*General Zoology*, vol. vii. p. 104.) A black variety of this bird has been noticed by Sir Robert Sibbald in his list of Scottish birds; but as no such variety is generally acknowledged, it was probably either an emigrant, or otherwise it might have been, as suggested by Dr. Fleming, the *Falco ater* of Gmelin and Temminck.

SUBSECT. 2. *The Buzzards.*

2265. *The honey-buzzard* (*Fulco apivorus* Linn., *Pernis apivorus* Cuv.), also called the capped buzzard, from a ring of closely set feathers seen between the bill and eyes (*fig. 344.*),



HONEY BUZZARD.

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from which peculiarity it is indebted for the honour of being separated from its congener, and placed by Cuvier in a new genus, called *Pernis*. Its vernacular name of honey-buzzard is, without doubt, derived from its feeding, though not on honey, yet on the larvæ of bees and wasps, which is ascertained by the quantities which have been found in its nest. Dr. Fleming describes the bird thus:—"Plumage brown above, brown and white beneath; the head grey. Length twenty-three inches, breadth fifty-two; weight thirty-one ounces. Bill, cere, gape, and claws black; irides and feet yellow. Quills twenty-

four; secondaries with alternate rays of blackish brown and bluish grey. Tail long, with transverse bars. In the female the plumage is spotted. Breeds in trees. Eggs grey, with obscure spots. Young birds have the cere yellow; the head spotted with brown and white. Feeds on bees, wasps, reptiles, and small birds. Probably only a summer visitant." (*British Animals*, p. 52.) This hawk is eaten in France; and Buffon tells us that it is taken by snares in winter, at which time being very fat it is tolerably well tasted. Mr. White, in his *Natural History of Selbourne*, informs us, that "a pair of honey-buzzards (*Buteo apivorus*, sive *vespivorus* Raii) built them a large shallow nest, composed of twigs and lined with dead beechen leaves, upon a tall slender beech, near the middle of Selbourne Hanger, in the summer of 1780. In the middle of the month of June a bold boy climbed this tree, though standing on so steep and dizzy a situation, and brought down an egg, the only one in the nest, which had been sat on for some time, and contained the embryo of a young bird. The egg was smaller and not so round as those of the common buzzard, was dotted at each end with small red spots, and surrounded in the middle with a broad bloody zone." Mr. Macgillivray has appropriately named this bird the bee-hawk.

2266. *The hen harrier* (*Falco cyaneus* Linn., *Circus cyaneus* Flem., *fig. 345.*) is in bad odour with the agriculturists, for its destructive propensities towards poultry, which are very great.

It is a well known bird, and from the prominently marked bars on its tail is called the ring-tailed harrier, it being now generally understood that the hen harrier and the ring-tail are one and the same species. The tail is two inches longer than the wings; male bird light bluish



HEN HARRIER.

grey; female brown above, reddish yellow underneath, longitudinally streaked with brown; young similar to the female, but the tints more vivid. Dr. Fleming describes it thus: — "Length eighteen, breadth forty inches; weight thirteen ounces; bill dark blue; cere and legs yellow; plumage grey; under and upper tail-coverts, belly, and below the wings, white. Behind the nostrils, and above the eyes, numerous black hairs. The first quill equal in length to the seventh; second and fifth nearly equal; third and fourth longest, and nearly equal. Inner webs of the first four, and outer webs of the third, fourth, and fifth, abbreviated from the middle; second, third, fourth, and fifth, black; first and sixth greyish; rest grey. Tail, with the two middle feathers, uniform; the others lighter coloured, and barred with dusky on their inner webs. The ear feathers forming a large concha, like a ruff on the sides of the neck, distinguish this species from the other British *Accipitres*. Female, with the plumage above, brown, with pale margins; beneath yellowish brown, with longitudinal dark spots; the two middle tail feathers with dark cinereous and blackish bands. In this state it is the *Falco pygargus* of Linnæus, and the

ring-tail of British ornithologists. Willoughby had hinted at their identity (*Ornithology*, p.40.); and Barington seems to have admitted it (*Phil. Trans.* 1770, p. 14.); but it was Moutague who removed all doubts on the subject. Breeds in furze and heath. Eggs four or five, bluish white, and without spots. This species flies near the ground, and is very destructive to poultry and game." (P. 53.) The hen harrier is very common in Scotland, and to the account given of it by Mr. Macgillivray, for critical description, detail of habits, and interesting anecdotes concerning it, we would refer the reader.

2267. *The common buzzard* (*Falco Linn.*, *Buteo vulgaris* Flem.), provincially called the puttock, is thus described by Dr. Fleming: — "Upper quarter of the tarsi feathered. Nostrils round; the margin of the upper mandible slightly waved. Length twenty-one, breadth fifty inches; weight thirty-two pounds. Bill bluish; cere, irides, and feet, yellow. Plumage above deep brown, with pale margins; below greyish brown with darker spots, sometimes with cross bars of white, scarcely apparent on the throat, but increasing on the breast, belly, and vent. Thighs plain dusky-brown on the outside, more rufous on the inside. The first four quills, with the inner webs abbreviated and black towards the extremity. Tail feathers dusky, with pale tips and brown bars, a little longer than the wings. Breeds in trees. Eggs two or three, size of those of a hen, white, with rusty spots at the large end. The young have the plumage light brown, variegated with white and yellow; throat and belly white, the latter with longitudinal large spots. Feeds on rabbits and birds, pouncing on its prey on the ground." (*British Animals*, p. 54.) This bird is remarked for its sluggish disposition, which keeps it from remaining long on the wing. It is very generally diffused throughout Europe, and in France, Italy, and Spain, is eaten as a great delicacy. Mr. Macgillivray objects to the popular prejudice against the buzzards, and generously contends in their favour, as being the accused party. We would refer the reader to his valuable work, so often quoted by us, for a detailed and interesting account of this bird.

2268. *The rough legged buzzard* (*Buteo lagopus* Flem.). This bird in colour resembles the common buzzard; nor does it greatly differ in size, but is readily distinguished from it by its feathered leggings, which reach nearly to the toes. It is thus described by Fleming: — "Length nineteen to twenty-seven inches. Bill and claws black; cere and feet yellow; irides brown. Head, neck, throat, breast, and thighs, yellowish white, with large streaks of brown. Back dark brown, with yellowish margins. Belly with a large brown spot; the rest beneath yellowish white. Quills white at the base, dusky at the ends. Tail, with the basal half, white; then a broad brown band; the tips whitish. In the female the head, neck, and tail are whiter; the sides and belly browner. Breeds in trees. Eggs four, clouded with red. Young have brown spots above, varied with white, with a stripe of the same colour over the eye. Tail with three bands near the end. Feeds on *Glires* and frogs. It is frequent in the north of Europe." (P. 54.) It is occasionally met with in England. Mr. Pennant mentions one which had been shot near London, having the extreme half of the tail tipped with white. One of less size was also shot in Suffolk, and later notices of it may be met with.

2269. *The ash coloured buzzard* (*Buteo cineraceus* Flem., *Circus cineraceus* Vigors) was first fully described by Colonel Montague. (See *Ornithological Dictionary*, 2d edit. p. 7.) Of the few specimens met with, most were taken for the common harrier, until this indefatigable naturalist first clearly described it in the *Linnean Transactions*. Fleming's account of it runs thus: — "Wings exceed the tail in length. Body in length eighteen inches, breadth forty-four; weight nine ounces and three-quarters. Bill and claws black; the latter small. Cere greenish. Irides, and margins of the eye and legs, yellow. Plumage above cinereous brown; beneath white, with a broad streak of bright bay down the shaft of each feather. Quills dusky black; the first very short, the third by far the longest. Secondaries cinereous with dusky bars. Tail, with the two middle feathers, dusky brown, others of an ash colour. The female has the head ferruginous, the nape with a patch of white, the remainder of the upper parts of the body, including the quills, dark chocolate brown, with ferruginous margins. Lower part of the rump and tail-coverts white. Beneath, the plumage is uniformly ferruginous. Breeds among furze. Eggs four, white. Young like the female. Montague supposes that Pennant referred to this species in his variety of the ring-tail, with the colour of the belly entirely plain. (*Brit. Zool.* i. 195.) Feeds on larks. Has probably been confounded with the *Circus cyaneus*, from which, however, it differs obviously in the superior length of the wings." (*British Animals*, p. 56.)

2270. *The shrikes, or butcher birds*, form the last family of the *Rapaces*, and though the individuals are small in size, they are by no means the least sanguinary of the tribe. They are said not to be permanent residents with us, the correctness of which assertion seems as yet undetermined. Three distinct varieties are acknowledged among us: the greater butcher bird (*Lanius Excubitor* Linn.), the flusher, or lesser butcher bird (*Lanius Collurio* Linn.), and the woodchat (*Lanius rufus* Linn.). The shrike genus, according to Bewick, is distinguished by the following characteristics: — "The bill is strong, straight at the base, and hooked or bent towards the end; the upper mandible is notched near the tip, and the base furnished with bristles; it has no cere; and the tongue is divided at the end, the outer toe connected to the middle one as far as the first joint. To these exterior marks may be added, that it possesses the most undaunted courage, and will attack birds much larger and stronger than itself, such as the crow, the magpie, and most of the smaller kinds of hawks; if any of these should fly near the place of its retreat, the shrike darts upon the invader with loud cries, and drives it from the nest. The parent birds will sometimes join on such occasions; and there are few birds that will venture to abide the contest. Shrikes will chase all the small birds upon the wing, and sometimes will attack partridges, and even young hares. Thrushes, blackbirds, and such like, are their common prey; they fix on them with their talons, split the skull with their bill, and feed on them at leisure." (P. 69.) Bewick, however, omits to notice a most remarkable feature in their manner of disposing of their prey, which Selby thus describes: — "It had just killed a hedge-sparrow (*Accentor modularis*), the skin of which, still attached to the thorn, is now in my possession; after killing the bird it hovered for a short time, with the prey in its bill, over the hedge, apparently occupied in selecting a thorn fit for the purpose; upon disturbing it, and advancing to the spot, I found the *Accentor* firmly fixed by the tendon of the wing to the selected twig. When confined in a cage this bird still evinces the same propensity for fixing its food; and if a sharp-pointed thorn or stick is not left for that purpose, it will invariably fasten it to the wires before commencing its repast." Selby found in the stomach of one of these birds the remains of a mouse; and Montague found in another those of a shrew (*Sorex arenarius* Linn.). "I could never observe," says Mr. Knapp, "that this bird destroyed others smaller than itself, or even fed upon flesh. I have hung up dead young birds, and even parts of them, near their nests; but never found that they were touched by the shrike. Yet it appears that it must be a butcher too; and that the name *lanius*, bestowed on it by Gesner two hundred and fifty years ago, was not lightly given. My neighbour's gamekeeper kills it as a bird of prey; and tells me he has known it draw the weak young pheasants through the bars of the breeding coops; and others have assured me that they have killed them when banqueting on the carcass of some little birds they had captured. All small birds have an antipathy to the shrike, betraying anger, and uttering the moan of danger when it approaches their nests. I have often heard this signal of distress, and cautiously approaching to learn the cause, have frequently found this butcher-bird occasioned it. They will mob, attack, and drive it away, as they do the owl, as if fully acquainted with its plundering propensities. Linnæus attached to it the trivial epithet *excubitor*, a sentinel; a very apposite appellation, as this bird seldom conceals itself in a bush, watching its prey." Audubon informs us that, — "When pouncing on its prey, this bird seizes it with its bill first (if *insectivorous*), then secures it under its feet to eat it. When coming on a bird or mouse, which it has pursued for some distance, it settles its feet at the moment it strikes with its bill the cranium of the object pursued. I have seen a bird of this kind in America," he adds, "carried to a considerable distance by a Carolina dove, fastened to the back and head of the dove with beak and feet. Although the toes are slender, and the claws comparatively weak, their

press is powerful ; and the bite it inflicts with the bill can draw blood from a robust man's hand." (*Ornithological Dictionary*, p. 66.)

2271. *The shrike, as a hawking agent, has claims to our notice on two grounds.* It is of great use in the capture of the passage-hawks, in which, as we shall elsewhere show, it performs its part with singular adroitness. As it is not an intractable bird, it has also been itself trained to hawk at fieldfares, thrushes, blackbirds, rails, quails, and young partridges; and in Germany, Russia, and Sweden, it is said the practice is still common. Its predacity extends also to rats, mice, and all the smaller vermin, which makes it a favourite in some districts among farmers, gardeners, and other ruralists.

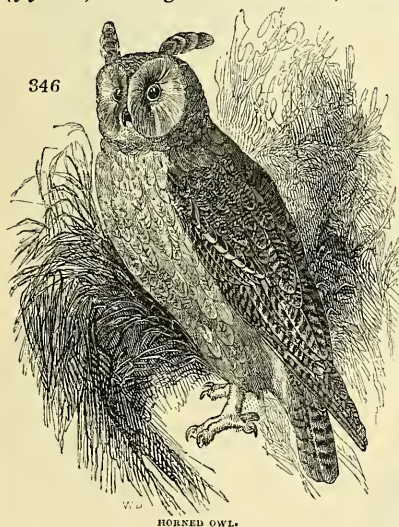
SECT. VI. Nocturnal Birds of Prey.

2272. *The owls, or strigine family,* are here principally alluded to, and the various members of it present an interesting picture of that gradual descent, which takes place in animal groups, from those whose wants being great, present a correspondent degree of perfection in the organs by which those wants are supplied, to such whose wants being either more circumscribed, or otherwise more easily supplied, do not exhibit an organisation so powerfully marked. In our tracings of the predacious characters of the falconine family (which includes the eagles as well as the more direct agents employed in falconry) to the hawks and buzzards, and lastly to the owls and hatcher birds, the descent has been gradual, but determinate, as our notices of the leading organs of predacity in each will testify. It will be found in our practical detail of hawking that this tribe is somewhat concerned, and that it is not unfrequently both offensively and defensively engaged.

2273. *The species of owls of common occurrence in Britain* may be said to be four, but there are at least three others that occasionally visit us. Of the four British owls three only are permanent, or at least are commonly met with : these are the long eared owl ; the barn or screech-owl ; and the common brown wood-owl, or howlet.

2274. *The horned or long eared owl (Strix otus Linn.)*, is thus described by Bewick (*fig.346.*):—Length fourteen inches ; breadth about three feet. The bill is black ; irides bright yellow ; the radiated circle round each eye is of a light cream-colour, in some parts tinged with red ; between the bill and the eye there is a circular streak of dark brown ; another circle of dark rusty brown entirely surrounds the face ; its ear-tuffs consist of six feathers closely laid together, of a dark brown tipped and edged with yellow ; the upper part of the body is beautifully pencilled with fine streaks of white, rusty, and brown ; the breast and neck are yellow, finely marked with dusky streaks, pointing downwards ; the belly, thighs, and vent feathers, of a light cream colour : there are four or five large white spots upon each wing ; the quill and tail feathers are marked with dusky and reddish bars ; the legs are feathered down to the claws, which are very sharp ; the outer claw is movable, and may be turned backwards." It is the least common of the three species we have noted, being occasionally found in ruins and rocky places, and more frequently met with in large woods, particularly in fir plantations where holly abounds ; and as it is seen with us at all seasons, it consequently is not migratory.

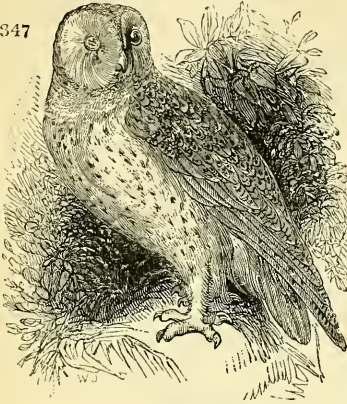
Its principal food appears to be mice, for Selby found in the stomach of one, no less than five skulls of mice, the relics, in all probability, of the last night's meal. Buffon observes that it seldom makes a nest, but lays four or five white eggs in one which has been forsaken by a magpie. It is said to be pugnacious in the extreme, and when brought down by the gun will throw itself on its back, and defend itself vigorously with both bill and claws. It is diffused very generally over most parts of Europe, as well as with us in Britain. It is taxed with being a great marauder, and seldom taking the trouble of building a nest of its own, but it forcibly takes possession of that of some other bird. The magpie, it is said, is often honoured with this preference ; and we can conceive the chattering which a pair of mags must make, when thus interrupted in their nidification ; for it is not the forsaken nest, as Buffon would imply, but it is the one actually occupied by the magpies that this marauder selects.



HORNED OWL.

2275. *The white, or barn-owl (Strix* viciinally it is called the "screech-owl,"

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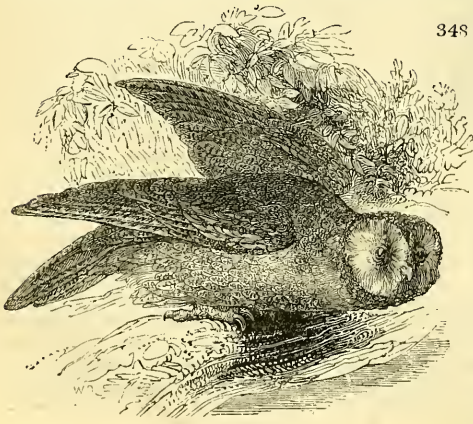


WHITE AND COMMON OWL.

a very interesting account of its habits. "This elegant bird," he says, "mostly frequents the habitations of man; is rarely found in woods, but resorts chiefly to barns for the sake of the mice, for which reason it is a welcome guest to the farmer. Like the rest of the genus, it chiefly lies concealed in the day, but will sometimes, when pressed by hunger, prey by daylight, especially in winter, or when it has young. It breeds in old decayed trees in the neighbourhood of farm-houses, or villages, and oftentimes in barns; makes very little nests; lays three or four white eggs, not so round or so large as that of the tawny owl. The food of this owl is chiefly mice, which it swallows whole, and, like other predacious birds, ejects the bones and fur in large pellets, which are termed castings. Some bushels of this ejected matter are found in the hollows of old trees. This species is said not to hoot, but to scream harshly; besides which, it makes a snoring and a hissing noise. Sir W. Jardine, however, asserts that the white owl does hoot, and that at night hooting is their general cry;" to which he adds, "that, when alarmed, it snaps its bill together with great force. It becomes exceedingly tame when taken young; we," he adds, "bred up one with a sparrow-hawk and a ringdove, who were confined together, and lived in great harmony; but the latter was the most quarrelsome, and was master of the triumvirate. After living together for six months they were given their liberty, and the owl was the only one that returned. Cats are known to kill, but never to eat, the shrew, which has been supposed to possess some poisonous quality. We have, however, taken from the stomach of one of these birds no fewer than five shrews." (*Ornithological Dictionary*, 2d ed. p. 23.)

2276. *The common wood-owl (Strix stridula* Linn., fig. 348.) is described by Bewick as being usually about the size of the barn-owl:

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COMMON WOOD-OWL.

the bill white; eyes dark blue; the radiated feathers round the eyes are white, finely streaked with brown; the head, neck, back, wing-coverts, and scapulars, are tawny brown, finely powdered and spotted with dark brown and black; on the wing-coverts and scapulars are several large white spots, regularly placed, so as to form three rows; the quill feathers are marked with alternate bars of light and dark brown; the breast and belly are pale yellow, marked with narrow dark streaks pointing downwards, and crossed with others of the same; the legs are feathered down to the toes; the claws large, much hooked, and white. This species is found in various parts of Europe; it frequents woods, and builds its nest in the hollows of

trees. The tawny owl and brown owl have, by the older authors, been described as distinct

species; but Latham, Montague, and Temminck, seem to agree in considering them identical, the differences observed between them in their opinion arising from age and sex." Bewick observes, that "it was communicated to him by J. F. M. Dovaston, Esq. of West Felton, near Shrewsbury;" that "it is this owl that hoots at night, and sharply gives out the repeated cry of *tee-whit*, particularly in cold frosty weather:" he also adds, that, "when these birds are slightly disturbed amid their slumbers in the vast, deep, and solitary woods, they will utter an inward tremulous hooting of *too-who*, the subdued and gloomy shivering of which is peculiarly horrid." Colonel Montague also is of opinion, that this is the only owl which hoots, adding that, "besides hooting, it makes a disagreeable screaming noise." It is a singular but well authenticated fact, that this owl feeds its young with small fish, as the loach and bullhead. Query, How and when does the parent bird take them? but take them it does. (See *Naturalist's Magazine* of London, vol. i. p. 179.)

2277. *Of owls, as hawkers at command*, we have but few indistinct notices; but we do believe they might be readily trained to evening hawking with some profit from the birds taken, and with much amusement at the sporting evolutions of such grave gentry. The twilight wanderers are more numerous than the mere passers-by imagine; and they all of them fly deliberately, consequently sport might be expected from them were owls trained to pursue them. The principal hawking use of the owl, however, has been confined to aiding the falconer in entrapping the passage-hawks; each of which uses we shall have further occasion to remark on hereafter. Owls, like kites, herons, rooks, and magpies, have been hawked at; and, if we mistake not, Colonel Thornton, on his hawking expeditions, frequently took them out with him, that he might not want sport if higher game did not come into view; but it is evident here, that the poor owl was the game flown at, and the colonel and his hawks the gamesters. In our opinion few birds are more useful than the owl, yet he has a host of enemies and numerous traducers.

SECT. VII. *The Methods of procuring Falcons and Hawks.*

2278. *The sage Mrs. Glaspe*, as a preliminary to her instructions how to cook a hare, recommends that we begin by catching one. With such an example before us, we also think it would be well to advert to the methods employed in taking hawks, ere we treat on their uses when taken and reclaimed; and should we be found to dilate somewhat on this subject, we have, as we think, sufficient reasons for so doing. In the first place, as we have elsewhere stated, we incline to believe that the great increase of population, the restrictive laws which will ere long curtail hunting and shooting, as well as that the love of novelty likewise will eventually tend to vary the sporting practices of our countrymen; in which case we cannot but incline to a belief that the hawking mania may again affect our active spirits. It is truly aristocratical; it infringes little on vested rights; and, finally, it injures no one, but benefits many. We proceed, therefore, to state that hawks may be obtained either from the nest as *eyasses*, or they may be caught when, just after having left their nest, they begin to be able to fly from bough to bough as *branchers*. They are also entrapped or netted, after they have arrived at maturity, either as permanent residents, but more generally during their migrations as *passage-hawks*.

SUBJECT. I. *The Taking and Rearing of Eyasses.*

2279. *The eyass must be sought after in such places* as accord with the habits of nidification of the parent birds; and as the mature falcons and hawks usually return to the same spot to breed, the seeker is pretty sure of finding them. Falcons, most of them, build in cliffs. Hawks also, some of them, make their nests in cliffs, others in trees, some on the ground, and not infrequently they make use of the old nest of some other bird, as the magpie, or crow, for the purpose.

2280. *Of unfledged eyasses* it must be remarked that, when discovered, the prudence of either taking them at once, or suffering them to remain until a little further advanced, must depend on circumstances. When it can be done, they should be left as long with the parent birds as possible, because they will thrive with them much faster than under the best care of the falconer. But there is, first, the chance of their being taken by some other person; and, next, that when more advanced in growth, the more danger arises that their quill feathers may be broken in moving them, from the greater resistance they then make, particularly if they have far to be carried. When the young are not immediately abstracted from the nest, but are either met with as *branchers*, or are purposely suffered to remain until they can clamber about the boughs, the usual method of taking them is by means of springes of green silk, set on the small branches among the foliage. Sometimes fine purse nets are used for the purpose, into which they are enticed by some tempting bait judiciously placed within. There are also other methods by which the simple caption of these *bowers*, *boughers*, or *branchers*, may be made, though probably such are less effective. Birdlime, which has been employed for many centuries, will commonly secure them, but it is injurious

to the feathers; they may also be hunted down, but it being essential to the use to be made of the birds that their talons, and particularly that their wing feathers should be perfect, every violence that endangers these ought carefully to be avoided. The young eyass is, without doubt, rendered much more obedient and attached by its early domestication, than either the *tackler* or trapped hawk can be, with equal trouble; nevertheless, the artificial rearing of the eyass is against its perfect development, and, consequently, the effective qualities of the latter preponderate; and they are more highly estimated by most falconers than the former. It is the chance of losing them, therefore, that occasions their early removal when once found. Most of the falcon tribes which breed with us, return every year to incubate in the same nest. Every one therefore, concerned in the capture, knows where to meet with them; and the well practised falconer knows also how to take them, either as eyasses or as branchers, with little difficulty; but the inexperienced will not find it so easy without some instructions, which we will endeavour to supply.

2281. *Haggards, or mature hawks*, are entrapped in various ways, but the most important varieties are generally taken during their migrations, and, as already observed, are thence called passage-hawks. Among the methods of taking mature hawks, that which is effected by the aid of the great ash-coloured shrike, popularly called the butcher-bird, is a common one. The method is thus clearly depicted by M. J. D. Hoy:—"The village of Falconsward, in North Brabant, has been long famed for its falconers: it formerly sent out men well practised in this art to every country in Europe; and the few efficient falconers still remaining (as this diversion has been of late years much laid aside on the Continent as well as in this country), are natives of the village of Falconsward. The hawks are generally caught during the months of October and November, when they are on their passage towards the southern parts of Europe. The falconer constructs a low turf hut in an open part of the country, with a small opening on one side; at about a hundred yards' distance from the hut, a light coloured pigeon is placed in a hole in the ground covered with turf, with a string attached to it, which reaches to the hut; another pigeon is placed in a similar situation on the opposite side, at the same distance. At ten yards' distance from each pigeon, a small bow-net is fixed on the ground, so arranged as to be pulled quickly over by means of a piece of small iron wire made fast to the net, and reaching to the hut. (See figure and description, p. 693.) The string by which the pigeon is held passes through a hole in a piece of wood driven into the ground in the centre of the bow-net. The falconer has also a decoy pigeon in a string at a short distance from the hut, and several tame pigeons at liberty on the outside, which, on the sight of a hawk, immediately take shelter within. The butcher-bird is fastened by a leather thong on a hillock of turf, a yard in height; and a few yards distant from the hut a small hole is made, and a piece of turf laid over, for a place of retreat in case of danger. The falconer, employing himself in some sedentary occupation, observes every motion of his little watch, and it is almost incredible at how great a distance he will point a falcon in the air. If it approaches, he shows symptoms of alarm in his feathers, fixing his eyes in the same direction; on a nearer approach he screams aloud, the falcon being then, perhaps, not less than three or four hundred yards distant; on its closer approach, he retreats under the turf, and quite conceals himself. It is then the falconer draws out the pigeons where the nets are fixed; which, fluttering round, generally tempt the hawk to make a stoop at one of them, which, if he takes, he is inevitably ensnared. While the falcon is near, the shrike continues in his hiding-place, hardly daring to show his head at the entrance of his retreat; should the falcon be taken, or pass over without attacking the pigeons, he cautiously creeps out, yet almost afraid to trust himself on his hillock, looking on every side; and does not, during some time, recover from his alarm. He is even more terrified at the sight of the goshawk, screaming and endeavouring to escape, as this hawk would even seize him in his hiding-place, should he catch sight of him, which the falcon would not. He does not show much alarm at the sight of the kite, nor at the different species of buzzards, unless they are very near to him; so that, by the motions of the butcher-bird, the falconer can tell, almost with certainty, the species of hawk which is approaching him. Were it not for the penetrating eye of the watchful bird, the falconer would sit many dreary hours to no purpose, as he would not know when to pull his pigeons out to lure the hawk." (*Magazine of Natural History*, vol. iv. p. 343.) Dr. Shaw's description varies the method somewhat. "Falcons," he says, "may be taken by means of nets, such as are used in catching larks; but the difficulty is to attract the bird. If a falcon is engaged in the pursuit of his prey in the air, he will not quit it and descend to seize an immovable, and apparently lifeless bait lying on the ground. It is therefore necessary to use a greater degree of art. The experienced falconer places and fixes in the centre of his net a pulley, or a strong iron wire bent into a ring; through which he passes a string of thirty or forty fathoms length, and, at the extremity, ties by its legs a live pigeon, which he carries with him into his hut or cover; and as the falcon sometimes flies so high as not to be seen, the falconer is informed of his motions by means of a butcher-bird, which is fastened by a string tied to a stick fixed near the net. This bird, by its movements, indicates the kind of hawk which is hovering above. If it be a buzzard, or

any kind of sluggish hawk, the butcher-bird's motions are but slight; but if it suddenly flies down and hides itself, it is a sign that some large kind of falcon is above. In consequence of this, the falconer lets out the pigeon, whose apparent state of liberty attracts the sight of the falcon. If it approach readily, the man withdraws the pigeon, and, a moment or two afterwards, lets it out again. This second appearance of the pigeon never fails to incite the falcon, which darts upon it as its prey, and is in consequence caught in the net, which the man instantly draws over it." (*General Zoology*, vol. ix. p. 139.) Pallas informs us that, in Russia, they capture gerfalcons by luring them under nets suspended at a moderate distance from the ground, on which ground luring pigeons are fastened down. Above the nets, lines passing from tree to tree, garnished with feathers, wave to and fro, and attract the attention of the hawks to the pigeons underneath.

2282. *The manner in which the Icelanders capture falcons* is thus related by Horrebow in his *Natural History of Iceland*:—"They strike two posts into the ground a little distance from each other; to the one they tie a partridge or pigeon (for want of either sometimes a cock or a hen), by a small line, two or three yards long, that they may flutter about a little, and that the falcon may sooner observe them; to the leg of the partridge or pigeon they tie another string, a hundred yards long or more, which goes through a hole in the other post, in order to draw the bait to that post, where a net is fixed like a fishing-net, with a hoop in a semicircle of six feet diameter; this being pulled down, it goes over and covers the post, for which purpose there is another string fastened to the upper part of the hoop, which goes through the first post to which the bait is tied: these two strings the falcon-catcher has hold of, that he may pull the bait where he pleases, as also the net over his prey. These nets they fix near a nest, or where they see a flight of falcons approach. As soon as the falcon sees the bait fluttering on the ground, he takes a few sweeps about in the air just over the place, and looks about to see if there be any danger; then he strikes with such violence that he takes the bait's head off as clean as if cut off with a knife. The moment he has struck the bait, he generally flies up again, unless very hungry, to look about if any danger be at hand, or any thing to interrupt him in the enjoyment of his prey. Whilst he is in the act of flying up, the falcon-catcher pulls the string and the dead bait to the other post close under the net, which the falcon not observing, presently darts to devour its prey; but the other string being pulled, he is caught in the net." Mr. Anderson also says, "the falcon is taken by means of a bird (the shrike we presume), in a cage put near the place where the net is fixed; which bird can see the falcon at an incredible distance, and by a certain noise gives notice, whereupon the falcon-catcher, who conceals himself in a bush, throws out a pigeon to flutter about, which, as soon as the falcon espies, he strikes down upon, and immediately the net is pulled over him. He is taken out with great caution, for fear of breaking any of his feathers in the wing or tail, and has a cap clapped over his eyes. The falconer is generally hid behind some stones or bushes, or else lies flat on the ground, a hundred yards or more off, where, even if the falcon sees him, he has no mistrust, being at such a distance."

2283. *A British method of capturing the falcon* is by means of what is known as the bow-net, thus described by a talented friend already noted, whose ready access to libraries affords

£49



BOW-NET.

him opportunities to glean from sources not open to every one. His acumen being such also as enables him at once to select the grain from the chaff, we offer with confidence whatever he is kind enough to favour us. His description of the bow-net is as follows, and the model he kindly sent us in aid of his description is herewith seen (*fig. 349*). "This engine," he says, "consists of a bow made of some stout wood, or of iron, forming a semi-oval (see model); each end of the bow is bent into an eye, and works backwards and forwards, when pulled by the falconer, after the following manner: two iron pins are thrust into the ground at four feet distance the one from the other, the heads of which being likewise turned into an eye, form with the extremities of the bow hinges at those parts. An oval net is prepared, measuring five feet long from end to end, and four feet wide across at the conjugate line, an imaginary line passing from one extremity of the bow to the other as it lies flat on the ground; half this net is staked down, at its circumference, to the ground with pegs, the other half is sown on to the bow; the net should be verged all round with a stout cord; the meshes must be two inches and a quarter square, so as to admit of the head and neck of the falcon passing through when the bird is under the net: the net work to be dyed dark brown or green. When the engine is set, the bow, and with it the half of the netting, being reflected back on itself, a lure of raw meat, or a live bird, is staked down to the ground within the range of the fall of the net. The falcon pouncing on the lure, the fowler, who lies in ambuscade at a distance, with a nimble jerk twitches over the bow and leaf of the net, by means of a long string attached to the circumference of the former (as represented in the model). When the bow and pegs are made of wood, the pegs have tenons on their heads, which fit into corresponding mortises cut into the extremities of the bow; a pin is then run through them to keep all in place, at the same time allowing the joints free motion. Whether the apparatus be made of iron or wood, in either case the parts should be painted a dark colour, and may be farther concealed by having loose grass, weeds, and

light rubbish thrown over the engine." He farther remarks, "I have in my model represented the bow of the net as made of iron, and working in a double eye. Iron is lighter, more easily pulled over, less likely to break, more portable, and being less bulky is less discernible. I know the advocates of the *wooden* bow say, that you can tuck the net under the bow as it lies on the ground, and thus hide it from the birds; but, in order to do this, the bow must be made of very broad stuff, thus it will be cumbersome and tardy in its operations; and that an engine intended to ensnare a quick animal! Nay, more than this, the net cannot be tucked so closely as to really conceal it effectively from view. Painting the bow and pegs dark, and dyeing the net brown or green is a much better *ruse*; indeed, the best that we can adopt." The same erudite authority observes, "I know not how the old Romans caught their falcons or hawks, but from a proverbial expression of theirs, which occurs in *Terence*, it would appear that the net was not used for the purpose:—

'Non rete accipitri tenditur neque milvio.'

There is a kind of net mentioned by authors living in the last two centuries, which appears, like falconry and hawking itself, to have fallen into total oblivion, and the make of which I have not been able to ascertain with any degree of accuracy. That net is the *urive* or the *urines*, thus,—'*Urines* (in falconry), nets to catch hawks with.' (*Philips's English Dictionary*, published in the year 1705.) '*Urives*, nets to catch hawks with.' (*The Gentleman's Recreations*, under the head of *HAWKING*.) Again, in the same work, the following passage occurs:—'Take a pair of these nets, called by falconers *urines*, or *urnes*, ... being common to be bought at net-makers' shops, I shall say no more of them.' The learned friend, to whose researches we are so much indebted, observes that, after a long and apparently hopeless search in every quarter likely to solve the mystery, which appeared to hang around these terms, "In vain I searched encyclopædias and dictionaries in all languages, old editions and new; with the exception of the authorities above cited, the word *urive*, or *urines*, was not even noticed at all; and we have seen what meagre descriptions they who did acknowledge the existence of the device vouchsafed to give. At length I stumbled upon the following passage in Willoughby, which I think affords some clue to the discovery of the shape and structure of that engine, which is as follows:—An account of some sea-fowl from a description of the *Ferroc Islands*,—'The *lunde* buildeth its nest some times on the continent, far from houses, digging itself two or three yards, according to the nature of the place, under ground; sometimes in *ures* (that are places under high cliffs, and by length of time are filled between with earth, and covered with grass), in which places they dig themselves into the earth, or build, where there is no earth, their nest under and between stones, where they can come to breed their young with most security, the most part being taken in such places, so that a man may often take above a hundred *lundes* in one *ure*. When the birds are flown, the men take them flying; which is done in this manner,—they have a long pole, at the end of which is a hoop drawn over with a net, whereof the meshes are almost as big as the quarries of a glass window, being like the net wherewith they take shrimps in some places, and this they call a stang, or staff. With his staff the fowler sitteth on the cliff, or in the *ures*, among the great stones, where he knoweth most fowl to come, which they call *flight-places*; and when the *lunde* cometh, flying either from or to the land, he lifteth up the staff and the net against the fowl; and when he hath got it into the net, he turneth the staff about, that it may entangle itself the better therein, a man being sometimes able to take two hundred *lundes* in that manner in a very short time.' Surely the net described in the above passage may very likely be, I do not say *must* be, the *urive*, which thus derives its name from the *ures*, in and amongst which it is found to be used? It is probable, if such be the real derivation of the term, that, through carelessness of speech and the not distinguishing a species from a genus, instances of which are of daily occurrence, the word *urive* may have been applied to nets of similar shape, but put to other purposes, such as catching falcons and hawks, instead of *geese*, and such like sea-going birds. The *lunde* is known by the name of *Anser Arcticus*. I may remark that Ainsworth and others have the word, '*Uria*, n. s. a naif or cormorant;' again, a sea-bird; and we have seen that the *ures* were the abodes of sea-fowls." (*Notes by the Hon. and Rev. Charles Bathurst.*)

2284. The short winged hawks, as the goshawks, buzzards, and sparrow-hawks, are netted, according to Sir John Sebright, after the following manner:—A net, eight feet in depth, and of sufficient length to inclose a square of nine feet, is suspended by means of upright stakes, into which transverse notches are made, and on which notches the meshes of the net are loosely placed; so that, as soon as a hawk strikes against it, the net readily disengages itself and falls. The inclosure is, of course, open above, and within a living bird, a pigeon usually, is fastened as a lure. It is likewise necessary that the colour of the net should assimilate as much as may be with the surrounding objects. By this process the larger falcons also, when very hungry, are occasionally taken, though the occurrence is rare; but in taking the common hawk, the merlin, and the hobby, the square net is effectively employed. The *call-birds*, or baits, are varied according as the one variety or other of the

hawk is sought for. The shrike we have already stated to be used as an *aid-de-camp*. "This bird," Mr. Griffith observes, "which recognises from a great distance the various *Raptores* hovering on high, and is but slightly agitated when he sees a buzzard, rushes into the hunter's lodge when he perceives a falcon. The hunter then slips a pigeon under his net, also held by a strong cord, to leave him the power of fluttering and exciting the falcon, which, when he attacks his prey bitterly, suffers himself to be drawn after it within the fall of the net. Should this plan not succeed, the fowler (if he has one) takes a tame falcon, which age and infirmity have rendered useless, and attaches it to the end of a long pliant twig, by the feet, and fixes the other end of the twig in the ground. A cord, beginning from the point where the bird is retained, passes through the pulley which occupies the centre of the nets. The fowler, who holds the extremity of it in his box, on a signal given by the shrike, draws it; and the twig bending, obliges the falcon to extend its wings as if about to pounce on a prey. The wild bird then directly precipitates himself on the other, and falls into the snare." (*An. Kingdom*, vol. vi. p. 210.)

2285. *Owling is also another method of luring falcons to the net.* Any owl may be employed for the purpose, but the same authority informs us that the great horned owl is the usual bait, and is made use of after the following manner: — The owl, confined between two wooden stands or rests, is taught to fly from one rest to the other without touching the ground. Between the rests a cord is tightly stretched, on which a ring plays, and to which another slacker cord is attached by one end, the other being fastened to the jesses on the legs of the owl, whose movements are thus confined to flying from one block or rest to the other. To this change of position he is accustomed by presenting him with food on the opposite side to that on which he may happen to be resting, until he becomes completely habituated to this method of exercising himself. A saloon is now formed in the midst of a copse of boughs, in the centre of which a log or rest stands, and without the saloon a similar one is placed at a hundred paces distant, the intermediate space on which the owl is placed being cleared away. It is necessary that the top and sides of this saloon should be covered with boughs in such a manner, that, although the outside is distinctly seen, there is no opening that will admit any bird to enter with unfolded wings. Nets are placed against the top and sides, leaving open that part only opposite to the resting-place of the owl. The fowler now concealing himself keeps watch, and when he observes the owl lower his head and turn it to one side, he becomes certain that some bird of prey is in the air. The hawk now marking the owl for his own, follows him into his retreat, when, becoming hampered in the meshes of the net, he is easily secured. Other methods of capturing hawks may be seen in the older treatises on falconry, but as they are most of them framed on similar principles with those described, we shall not enter further into the matter, but content ourselves with observing, that the use of *trap-cages*, fashioned after those employed for taking goldfinches, linnets, &c. have also been employed by falconers, particularly for the capture of the smaller varieties of hawks.

SUBJECT. 2. *The Technical Terms in Use among Falconers.*

2286. *The redundancy of sporting terms in days of old was very great,* and the use of certain technicalities was essential to the character of every true sportsman. As monks and prelates fostered the sport, we need not wonder that many of its terms were derivatives from the Latin. Our Saxon masters had left us many. We had borrowed from the French, Dutch, and Belgic many more; and, as may be supposed, some were vernacular. Nor was the language used in this pastime entirely confined to mere technicalities, or terms of art; for, as is well observed by an ingenious writer, "No art or craft whatsoever has more copiously contributed to the figurative language, proverbs, and adages of our ancestors. To them hawking was a complete mine of metaphor. Our poets, from Chaucer to Spenser and Shakspeare, down to those of more modern times, continually derived figures, illustrations, and comparisons, from the falconer's craft. Those who are at all familiar with the works of our immortal dramatist, will instantly recall many instances of this habit. Nor were our English poets at all peculiar in this practice. The same obtained among the old writers of France, Spain, and (perhaps in a more marked degree) among the old Italian poets. The great Dante abounds in terms of falconry, and similes and allusions drawn from the same source; and so also does Petrarch." (*Penny Magazine*, part xxxii. p. 464.) Our author might have extended the list of terms which our language owes to hawking. The very name hawker, as applied in common to an itinerant dealer in small wares, is, in all probability, derived from an old custom of carrying about hawks for sale. We are borne out in this assumption by Mr. Nares, in contradiction to Johnson, who derives it from *hock*, a German word for salesman. In all sporting matters this great lexicographer must not be implicitly relied on; as one instance, among many others, we cannot forget that he defines pastern as "the *knee* of the horse." The sellers of hawks being, according to Mr. Nares, called cadgers, from the *cadge*, or stand, on which they carried them about, has transferred itself to a general trafficker, or huckster, of the lowest order, who is thence also often called a cadger. Numerous, however, as these figurative allusions were, the

technicalities more than equal them; and, according to the sporting prioress of Sopwell, an acquaintance with them was of the greatest importance to all such "as woll lerne the kynaely speche of hawkyng." We, however, by no means profess to give all the hawking terms that are common in the vocabulary of ancient falconry; neither can we hold ourselves as answerable for the critical correctness, either orthographical or etymological, of those which appear on our pages. The authorities from whence we have derived them are often at variance with each other, and sometimes with themselves. We, however, would refer the inquisitive reader, who would seek further into the subject, to the Dame Juliana Berners, to Turberville, Latham, Markham, Blome, &c.

2287. *The parts of the body of the hawk are thus named by early falconers*:—In the head, the upper mandible was called the *beak*; the lower the *clap*; *coping* was paring both beak and talons; the yellow bare spot at the base of the bill, which naturalists term *cere*, the hawker knew as *sear* or *sere*; and the nostril as the *nares*. The legs, from above downwards, were called *arms*, the toes *petty singles*, and the claws *pounces*. The wings of the hawk were its *sails*, as their long feathers were *beams*. A subdivision of the wing feathers gave to the two longest in each wing the term of *principal feathers*, and, to the two next, that of *flags*. *Imping* of these feathers was artificially mending them. The tail was called the *train*, as the feathers underneath it and behind the thigh were named *pendent feathers*. The *crow*, or *crop*, which in hawks is rather a distension of the gullet than a distinct pouch, was called the *gorge*. The stomach was known as the *panel*, and the faecal matter, within the intestines, the *glut*. It may be prudent to observe, that *gorge* is more particularly used to imply abundant feeding. Substantively it also implies a very full meal given to the hawk at intervals of four or five days beyond its ordinary allowance, as circumstances may seem to require an extra stimulus. *Summed* and *unsunned* were terms applied to the complete, or mature; and the immature plumage, bearing the same signification as *mewed* or unmoulted, and *intermewed* or moulted. *Seamed* was a want of condition, as *inseamed* was perfect condition. *Put in*, the game when it takes to a hedge to evade pursuit is said to be *put in*. *Waiting on*,—to teach a hawk to well *wait on*, i. e. to readily attend to her master, is the very feather in the master's cap. When soaring aloft in the air, the hawk bends herself to watch all his motions, and is ready to come to his *luring*, or to follow him wherever he pleases, it is then she is perfect in *waiting on* him. *Whistle*,—by this sound the falconer dispatches his hawk from his fist, and he *lures* her back again to the fist by the same. The *hallo* is used by others for similar purposes,—

"*I'd whistle her off, and let her down the wind
To prey at fortune.*"

Othello.

Again, in an old play:—

"*If you can whistle her
To come to fist, make trial, play the young falconer.*"

2288. *The names of hawks as connected with their ages*. Eyass is a young hawk just taken from the nest. This word is variously written, the most usual has been eyass. Some have derived it from the French *niais*, silly; others from the German *ey*, an egg; and as many of our words used in hawking are derivations from the Saxon or German languages, such etymological construction is not without its force. Eyerie, ey'ry, or aerie,—this word, which expresses a nest of hawks, is also by many considered a derivative from the German *ey*, an egg. By others, however, it is thought to be of Welsh origin, derived from *eryr*, an eagle. Webster appears loth to fix its critical etymology. Bailey writes *ae'rie*, an airy or "nest of goshawks," and, of course, of any hawk whatever. Blome makes a distinction between eyasses taken from the nest and bred up by hand in a room, and those bred up and kept at hack, i. e. at liberty. We notice this distinction, not for its importance, but that the readers of this author may not be led into difficulty on some future occasion, when others of the older authors may advert to an eyass tackler. When an eyass can hop from bough to bough, it is called a *brancher*. One taken from the nest and allowed its liberty, being only restrained from escaping by observing a certain time and place for feeding it, is known as a *tackler*, or *hack-hawk*; and such, the old trainers say, make the best hawks. The young bird, when it can fly and prey for itself, is called a *ramage*, or *soar-hawk*. Young hawks, taken in the spring, were often called *lantinners*; but, taken after *Lent* time, they were called *haggards*, from their disposition then being more haggard or untractable. Haggard, however, in its general and correct sense, implies a full grown hawk of any kind, taken in its unreclaimed state. Bailey has "*haggard-hawk*, a wild hawk which preyed for herself." Though this word is generally written with a double *g*, its derivation being undoubtedly from the Saxon word *hag*, it would, perhaps, be more correct were it written *hagard*. We may also remark, that the old writers on falconry mystified this word not a little; and were full of the praises of the haggard, as though it was a specific term applicable to one kind of hawk only. Latham's *Book of Falconry* treats from beginning to end of the haggard falcon, by which he intends the slight falcon, although it is under this term he continues his description of hawks generally, to the end of the first book; nor is it without

much study, and comparison with other authorities, that we at last find that haggard is not intended by him to apply to any one species of hawk, but to every hawk whatever that is wild and unreclaimed. This appropriation of a general quality to designate a particular individual, is further instanced in Turberville's falcon *gentle*, which was undoubtedly thus named from its mildness, and even affectionate manner towards its keeper, when it is reclaimed. Linnaeus (critical as he was), from these authorities, was led to class the slight falcon under the unscientific term of *F. gentilis*. Falconers have been also too apt to call the female hawk of almost every kind, *falcons*, and the males *tiercels*. There are, however, but two kinds of falcons conventionally acknowledged in common, by the falconers of the present day, which are the Iceland, and the slight or peregrine falcon. As a misnomer, this has caused much ambiguity and confusion to the readers of the older hawking treatises; and so imperative does custom become, that we ourselves are sometimes apt to introduce the word falcon, where its critical propriety is questionable; but we do it to avoid the tax of pedantry. We are induced to dwell more on this subject than the matter might to some seem requisite; but as we have known much difficulty and misapprehension to have occurred by this obscurity of nomenclature, and malappropriation of general qualities in the designation of individuals, we could not resist the impulse to endeavour to rectify the error; for we again state, that we cannot refrain from thinking that hawking will again become prevalent.

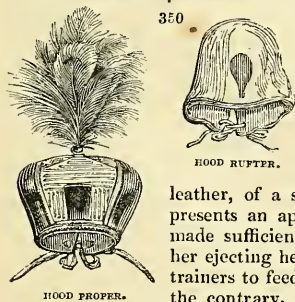
2289. *The actions and acquirements of hawks.* The operations of taming the hawk were called *reclaiming*, as the accustoming it to bear the sight and presence of company was *manning* it. Fluttering, or striving to escape, is *baiting*; fighting with each other, *crabbing*; when sleeping, the hawk *jouks*. Her prey is her *quarry*. *Binding* is the act of grappling with her quarry; when she flies away with it, she *carries* it, as she *deplumes* it when she strips off its feathers: the dead carcass is called the *pelt*. When having seized her quarry, the hawk first carries it aloft, and then descends with it to the ground, she *trusses* it. When, after soaring aloft, she descends to seize her quarry, she *swoops*; the descent has also been called *swoop*,—"at one fell swoop." The hawk's pursuit after game is called *flying*; thus, also, a hawk *flies at fur*, when hares or rabbits are the objects pursued; or she flies at *plume* or *feather*, when fowls are the game in view. When she flies out too far from the game, she is said to *rake*, as she *checks*, when, forsaking her proper quarry, she *flies* at crows, magpies, or the like.

2290. *Mewing and intermewing are important hawking terms.* *Mewing* is the moulting or casting of the feathers: hence *mew* is the place appropriated to this process, and hence a hawk is *intermewed* after she has gone through her first moult. Previous to the first mewing, or moulting, she is called either a *soar-hawk*, or a *ramage-hawk*. Hawks are also known as *hawks of the lure*, or *hawks of the fist*, according as they return to the lure or fist. Long winged hawks are of the former division, and the short winged of the latter. *Castings* are the indigestible matters thrown up from the stomach: *castings* are also very commonly spoken of as forced emetics; such as small stones, wool, feathers, &c. as will be further treated on. *Cadge*, or *cage*, is the stand on which hawks are moved from place to place, and will be figured hereafter. In the numbering of hawks we call two a *cast*, and three a *lese*.

SUBJECT. 3. *The Apparatus employed in the Training and Flying of the Falcon and Hawk.*

2291. *The implements used in hawking* will first engage our attention. The hood is an important one, and has called forth the descriptive powers of a royal writer in the person of Frederic II., who describes it in his *De Arte Venandi cum Avibus*, which was printed at Augsburg, A. D. 1596, from a manuscript belonging to a physician of Nuremberg. In this work, now extremely scarce, there is an interesting description of the hoods called *capella*, which were first invented, as it is supposed, by the Arabs.

2292. *The hoods for hawks* (fig. 350.) are the proper, on the left hand in our cut, and the rufter, on the right hand. Both are almost equally necessary and important assistants to the falconer in the training of falcons and hawks. In the olden instructions of early falconers, the different hawks we find were hooded with one of these hoods only, according to the kind of bird in training; but later falcon trainers found it proper to make occasional use of either the hood proper, or the rufter hood, as circumstances indicated. The hood proper is a cap made of stout leather, of a size corresponding with the hawk it is designed for. It presents an aperture before, which is to receive the beak, and is also made sufficiently large, not only to receive her food, but also to allow of her ejecting her castings. It is not, however, the custom with modern trainers to feed their hooded hawks while under initiatory training; on the contrary, they omit it until the hawk is somewhat more reclaimed, but they give a little meat directly the hood is put on. Behind the hood a vertical slit is seen, which separates the cap posteriorly to receive the head. Each side of this slit is fur-

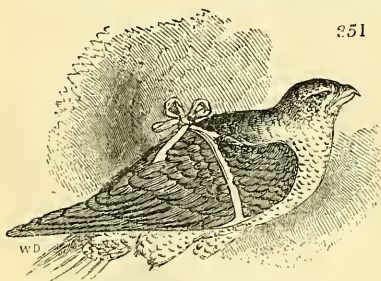


nished with a leathern brace, and as these interlace, so, when drawn tight together, the hood becomes secured on the head. Great care is required so to form the hood, that, while it effectually prevents vision, it shall not press injuriously on any part, particularly on the eyes, which only can be done by deeply indenting the leather laterally. It is indispensably necessary that, in putting the hood on, as little violence as possible be used; for any injury received, or any fears excited at this time, are eradicated with great difficulty. It is to avoid this early disposition on the part of the hawk to rebel, that the ruffier hood comes in aid. The enuring the hawk to this head gear is technically called *making to the hood*. A hawk's proper hood is usually topped with a plume of mixed feathers of the game kind, by which feathers it is put on or taken off. It may be well again to remark, that the placing of the hood on the head, inoffensively to the animal, requires a dexterity only to be acquired by care and perseverance. It would be well, therefore, first to practise it on a lay figure, *i. e.* a stuffed specimen; for if the lesson is to be practised on an unreclaimed hawk by an untaught hand, the bird will probably be ruined, and the hawkler disappointed. The more readily therefore, we repeat, to enure the raw hawk to a hood, is to commence with a ruffier hood, and particularly for the mature and passage-hawks. The Icelfinder, and the haggard slight falcon, especially the former, is so wild and obstreperous, that it is not prudent to attempt hooding with either of these restraints, ruffier or proper, until by fasting, dripping, and watching, they are rendered obedient.

2293. *The ruffier hood*, we have hinted, is not approved of by some trainers; and without doubt it may, in experienced hands, be dispensed with in most cases; but we must repeat, that when a haggard is newly taken, the stiff hood often offers much annoyance to the bird even in good hands; whereas the ruffier hood, as seen in the marginal figure, being made either of cloth or chamois leather, is very supple and light, and may be slipped on and off in a moment; it is also easily secured under the throat, either by a drawing slip or by two ends tied to each other. In the scarce work, *De Arte Venandi*, of Frederic II. already noticed, p. 697., the hood is so highly and so elaborately described by this imperial author, as to warrant us to suppose that much of his known success in hawk-training was gained by its means; without it our own power over the hawk would be little.

2294. *The properties of the hood*, as a restraint, are very great. With this on, whether the hawk be at home or abroad, she is kept perfectly quiet; without it, we repeat, our power over the haggard nature of these birds would be very limited. In the field especially they would be under no restraint at all, but would *bait off* the moment a bird of any description came in sight. Sir John Sebright has elucidated this effect in a very philosophic and satisfactory manner. He says, — "It may, perhaps, appear paradoxical to assert, that hawks, by being kept hooded, are brought nearer to their natural habits: but this is undoubtedly the case; for, by this treatment, they are induced to remain at rest when they are not either feeding or in pursuit of game; and such are their habits in a wild state, when left undisturbed." We again repeat, that as long as the hood is on, the hawk remains quiescent, and that equally whether confined to the block or carried abroad on the fist. When the hawk is removed from place to place, it is evident that the hood is indispensable, to prevent anxiety or alarm. It is necessary, however, to observe, that the hood is not in general use for either goshawks or hawks, properly so called, when carried abroad, but is principally required at those times for the falcon tribes. This contrariety of treatment arises as well from the differences which exist in the training as in the flying of these birds, as will become more fully apparent in the course of our detail. The sudden removal of the hood for sporting purposes, and the starting off of the hawk, are, in the technical language of the falconer, termed "*flying out of the hood*." It is a singular caution, met with in some of the ancient hawking instructions, that the hood must on no account be formed of any red material, that it might not subject the hawk to be struck at by an eagle. This caution might be a prudent one, where scarlet plumage was common to the birds of particular localities, but in Europe it would not apply.

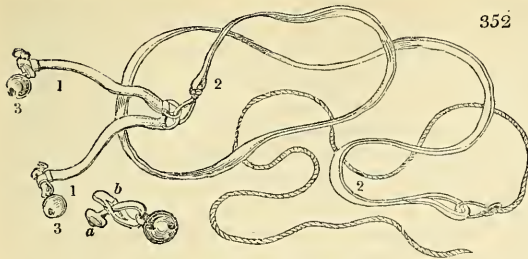
2295. *The brail* (*fig. 351.*) is a thong of soft leather longitudinally divided, so as to admit the pinion joint within the *slit*, after which the loose ends are to be thus disposed of. The



THE BRAIL.

lower is to be passed backwards under the wing, and, being brought along the side of the body, is to be tied to the other end above it. This restraint prevents the newly taken hawk from *baiting* (resisting) during the time her attendant is engaged in any operation on her, and such is essentially necessary to keep her from baiting off, and thereby injuring some of the more important of the wing or train feathers; the loss of any one of either wing or train feather would incapacitate her from successfully flying at any strong quarry. Imping, it is true, in such cases can be resorted to, but even the best impinged feather is unequal to the natural one, and imping if possible should be avoided: for it must be evident that the abstraction of one wing-feather only would greatly interfere with the power of the wing.

2296. *The jesses, 1 1, leash, 2 2, and bells, 3 3 (fig. 352.) as appointments of the hawk.* The first and last, indeed, are complete fixtures, being never removed from the legs. The jesses (*bb*)



JESSES, LEASH, AND BELLS.

are straps a few inches long, formed either of silk closely knitted, or of leather, but commonly the latter. Each fastens round the leg by a slipping loop or noose, leaving an end which is furnished with a ring. The two rings are intended to hook on the swivel of the leash in such manner that they can be disengaged in a moment, when the quarry comes within view. When the hawk is carried on the

first, the leather end of the jesses are wound round the fingers for security. The bells are necessary articles, not only to apprise the trainer where his strayed bird is, but also when heavy bells are used, as is sometimes purposely done on hawks at hack, it prevents them from preying for themselves. Each bell is attached to its appropriate leg by a leathern brace called *bewit*, when the button (*a*, fig. 352.), being passed through the slit *b*, secures it to the leg. Formerly the tone of the hawk bells was an important consideration, so much so that they were imported from Germany, as being made in no other country to produce so much or so clear a tone, which was attributed to the silver introduced into their manufacture. Shakspeare expressively alludes to this, —

“How silver sweet sound lover’s tongues by night.”

According to the *Booke of St. Alban’s*, the Milan hawking bells were to be so prepared, that one bell should be a semitone higher than the other. The leathern-eared moderns are less refined, and a pair now lying before the writer, are twins in sound and size, and yet are true hawk-bells.

2297. *The creance* is nothing more than a long string or light cord, which, being attached to the leash or leathern thong, allows the hawk more liberty when occasion requires it. It is seldom used, however, except during the training process.

2298. *The tabur-stycke and hawker, the lure and the drawer*, are all modifications of one instrument (fig. 353.). Some one of these modifications has been always used by way of



TABUR-STYCKE.

allurement to the hawk to return to the hawker. The tabur-stycke of olden times, we are told, was merely a piece of wood rounded and besmeared with blood. The hawker, according to Mr. Hazlewood, was an improvement on the tabur-stycke of the *Booke of St. Alban’s*, and “the little rownde stycke hanging in a string,” mentioned by Turberville. The hawker was a wooden rod, about twenty-two inches long, its upper part being cased with iron, and having a bird with expanded wings at the top. It was also furnished with a bell, which was said to be in tone “rather sullen than musical.” This tabur-stycke, or hawker, must have been a very magician’s wand, for by the same authority we are told, — “Ye must fynde a foule in the ryuer, or in a pitte precisly, and then sette your hawke a grete space upon a moll hyll or on the grounde, and crepe softly towards the foule from your hawke streyghte waye. And whan ye come almost there as the foule lyeth; loke backwarde toward the hawke and with youre honde, or wyth your tabur-stycke, becke your hawke to come to you.” It is, indeed, surprising what effects discipline will have over the most stubborn natures; particularly where it is mixed with indulgence and the hope of reward. As food is the object sought after by every animal beyond any other, so the organ through which they receive it is by them at least respected, sometimes it appears highly prized; obedience follows, and

continued hope of reward keeps the discipline in full energy, and destroys every disposition to open rebellion. Our hold on the generous animals, as the dog and horse for instance, is grounded in part on fear, in part on hope, and in part on affection. On the predacious animals, our hold on their obedience is principally selfish; much fear, much hope, and faint symptoms of personal attachment mark their intercourse with man. There is, however, without doubt, a certain degree of ferocity implanted in the very nature of all carnivorous animals, which by rendering them fearless, fits them for the attack on all such animals whose flesh will suit their tastes and satisfy their wants. This is in consonance with their natural habits, nor are we to regard them on that account with aversion, nor blame them for those propensities nature herself implanted within them. Nay, more, they occasionally evince sparks of genuine attachment. We have on record notices of hawks, which, however hungry, would not eat unless the food was offered by the favourite falconer. Van Amburgh’s lions and tigers evince marks of affection also.

2299. *The lure and drawer may be considered as identities.* This instrument was formerly prepared with much more trouble and artifice than seems to be at present employed, as we witness in the description given of it by Sir John Sebright, who says, "the lure is a forked piece of wood, covered with the wings of birds. Pieces of meat are tied to each side of the lure, and the whole is attached to a string, three or four feet long, by which it may be swung round in the air," or thrown to a distance on the ground. In the olden times, on the contrary, we have reason to suppose that the lure was more artificially framed, and so fashioned as to resemble a bird, exhibiting not only wings, but a beak and talons also. The plumage constituted the *drawer*, and the feathers which garnished it were purposely varied, according to the nature of the quarry to be flown at. Thus, we read, "When they accustom the hawk to fly at a kite, a heron, or a partridge, they change the *drawer* accordingly." When hawks under the highest discipline were flown, a lighter drawer, after the form of a tasselled hood, was used. It, however, remained sufficiently conspicuous, as may be seen in the accompanying sketch from Reeding. The *lure* is a most essential part of the apparatus employed in the training and practisings of the long winged hawks, and of those only; nor can they be too early or too intimately acquainted with it. Thus, to make the lure, the



hawk is fed entirely on it during training; and we know how powerful a medium of connection the furnishing of food becomes between ourselves and the animals around us; and it follows that by such means the confidence of the animal, which in a wild state accompanies them through the vast field of nature, in the domesticated one centres in the hand which feeds it.

2300. *Hawking gloves* of sufficient size and substance, form a necessary hawking appointment. These gloves were made of some stout substance to guard the hand and wrist on which the hawk is placed. In accordance with that show of state, and observance of ornament, which accompanied even the sports of old, the glove was a very consequential article. Some were garnished in the most costly manner. In the inventories of apparel belonging to Henry the Eighth, frequent notices occur of hawking gloves, and it is known that seven such, "most richly embroidered," were to be seen in the royal jewel house at Hampton Court. (See *Hawking-glove*, figured, p. 123.)

2301. *Seeling, coping, imping, mewing, caging, or staging*, were necessary and important operations in falconry; and, with the exception of the first, or *seeling*, they remain the same to the present day. We only notice *seeling*, to make our historical account of the art complete. *Seeling* was an early and cruel practice of the falconers of sealing up the eyes, to prevent the hawk from seeing around her. A needle and thread were passed through both eyelids, so as either to shut out the whole of the light, or only a part, as the two ends of the thread were more or less closely knotted. As early as the days of Dame Juliana Berners, this cruel practice was getting into disuse; for she informs us that, in her time, there were "falconers of latter and better knowledge, who had discovered a method of blind-folding the bird without unnecessarily torturing it."

2302. *Coping* we have already alluded to as being a paring of the beak and talons of hawks, to prevent their sharp points from wounding the hands, &c. of their keepers; to remove also the exuberant portions of a too rapid growth during close confinement; and sometimes also as a check to their unhallowed pursuit of game. In performing this operation, particular instruments, called *coping-irons*, were formerly employed; but either a sharp knife, or a file, is sufficient for the purpose, taking care that the sensitive parts are not wounded by penetrating to what is called the *quick*. We have already hinted at a division of animals into generous and selfish; or, we might say, into placable and ferocious. The former live on grain, or on the fruits of the earth; indeed, are essentially vegetable eaters: the latter are carnivorous, preying on the flesh of each other. Such are the objects under our present consideration, and it is on them principally that these coercive measures are practised; but even the hawk trainer will find, that keeping up the hope of reward will answer his ends better than the dread of punishment in most of them.

SECT. VIII. *Mewing, Weathering, Bathing, and Imping the Feathers of Hawks.*

2303. *These being subjects of much consequence in the treatment of the hawk*, they may, with propriety, receive a separate and distinct notice.

SUBJECT. 1. *Mewing, or Housing, of Hawks.*

2304. *The mewing, or housing, of hawks* is a very important part of their treatment, whether as intended to imply their general state of confinement, or that which is particularly adapted to their moulting state. Mewing originally was confined to the direct

act of the moulting, or casting of the feathers of the hawk; and there can be little doubt but that the latter acceptation of the term is the correct one; and that the term *mews* was originally intended rather to express the immediate apartment in which hawks were shut up to *mew*, or cast their feathers, than to express their ordinary habitation, though even in this sense it is not altogether a misnomer, as will be seen. The moulting of feathers is expressed by a word of similar sound by the inhabitants of almost all European countries. By the Welsh it is called *miw*, *mudare* in Italy, *muer* in France, *mausen* in Germany, and *muiten* in Holland, &c. And although the word has divers other meanings, as *mew*, a gull, *mew*, to cry as a cat, &c. &c. it more strictly refers to *change* and *alteration*; hence to *mew*, or *change* the feathers: and not only does it express a change of feathers, but also of hair, skin, horns, and other animal exuvieæ of a deciduous nature, —

“Nine times the moon had *mew'd* her horns.” *Dryden.*

Mew also expresses *confinement*, which brings the term more particularly to bear on our subject, —

“More pity that the eagle should be *mew'd*,
While kites and buzzards prey at liberty.” *Shakspeare.*

“Close *mew'd* in their sedans, for fear of air.” *Dryden.*

“She hated chambers, closets, secret *mews*,
And in broad fields preserved her maidenhead.” *Fairfax.*

2305. *The Mews at Charing Cross*, we make no doubt, were built as a general receptacle of the hawks of the kings of England, not only when moulting, but also as a general conservatory for these birds. Richard II. in 1377, appropriated it to this purpose; and it continued so until 1537, when, in the twenty-seventh year of Henry VIII. it was converted into stables for the horses of that monarch; from which originated the application of the term *mews* to the long ranges of stables, which run behind the streets of London inhabited by the noble and wealthy. An honoured and talented friend of ours, who in an eminent degree unites deep research with much wit and humour, observes on these mews, “Falconry is indeed so obsolete as a practical sport, that almost the only thing which in these days reminds us of its ever having existed, is the word “Mews” one sees written up in the back streets of London: even the “King’s Mews,” which gave some idea of grandeur and gallant bearing, are pulled down, and swept away from the face of the earth, and no longer designate the present abode of the noble steeds of the royal palace! And as to the ordinary lines of coachhouses, ginshops, dunghills, dirty fowls, bristling *cheveux-de-frises*, with empty quart-pots hung on the pegs, swaggering helpers, shrieking children, and scolding women, how little does this chaos bear the stamp of the *mews* of olden time, where the stately falcons were kept up during moulting season, when they were *changing* (*muto*, hence *mews*) their plumage, and all were carefully tended, and reclaimed, and trained for their baronial service!”

2306. *Hawks*, in their general state, should be kept in an apartment to which the air has free access, but completely sheltered from cutting winds and frosts. When numbers are to be kept, a quadrangular shed might be erected, where the benefit of the lee-side might always be obtained. They may rest, according to their kinds, on the flat, or be placed on perches or blocks; but during the warmer months many falconers allow them grass sods to rest on. It will at once be evident that hawks reared from the nest cannot bear the inclemencies of the weather in the same degree with the baggards. With this caution, it may be observed, that, except during intense frost, it is not judicious to shut them up in a closed apartment, even in winter. The open air is their natural habitation; and it is therefore that which is most likely to keep them in health and strength. On the subject of feeding, we forbear to dilate here, as it is fully noticed in other parts of our detail.

2307. *Bathing* is strongly recommended by most practical hawkers, and it is undoubtedly essential to the health and comfort of these birds. M. Huber is so warm an advocate for it, that he directs that such hawks as do not bathe voluntarily, be forcibly dipped once or twice a-week. Sir John Sebright recommends their being bathed “every five or six days in a clear stream, or pool of water, that is shallow at the edge.” In very hot weather we should think bathing two or three times a-week would not be too much. It is necessary, however, to observe that hawks are not taken to the bath unfed, and which caution seems generally observed, but the meal should be a moderate one. When a running stream, or pool, is not within the boundaries of the mews, wide bowls, with water, may be placed before them. But to offer this luxury truly after a state of nature, it is only to take them to any stream or pool, each being hooded and furnished with a leash, to which a creance should be tied, to give more liberty. Being then fastened to the ground at a proper remove from one another, the keeper, or trainer, unhoods them, and retires to some distance; when, having bathed and plumed themselves, they should be hooded, and taken up as soon as they begin to show any signs of uneasiness, otherwise, as well observed by the ingenious baronet, “*baiting* in the creance with a full crop might prove very prejudicial.”

2308. *Weathering of hawks* is also important towards the preservation of their health. They should be weathered, *i. e.* placed without doors, and unhooded at every convenient

opportunity. The haggards especially require this exposure, as being more natural to them; but they sometimes do not bear unhooding so well, particularly if they are at all inclined to be rammish or wild. With such a hawk it is better either to put her out hooded, or otherwise to let her weathering be in the evening, when even the wildest inclines to quietude. In some cases feeding moderately will prevent their baiting and striving equally as well as the hooding of them. Latham however says, "he would wish all hawks to be weathered in their hoods." It is recommended to place passage-hawks and haggards on small mounds turfed over; eyasses may be confined on their blocks. Some falconers, however, prefer pegging them down on the bare grass, if the ground be soft.

SUBJECT. 2. *The Mewing, or Moulting, of Hawks.*

2309. *The deciduous falling of the feathers of birds*, as an annual change common to all of them as far as we know, has been already noted. The reproduction of a new set of feathers requires more than ordinary exercise of the powers of the constitution, and hawks therefore when mewing, as horses when moulting, are less lively, and suffer much more from atmospheric changes than at other times.

2310. *Preparations for mewing of hawks* were made by the old falconers after the winter flights had terminated; and the strict observers of times and seasons commenced the process at Lady-day. It is not bad practice to take the first step by *coping* (paring) the beak and talons of the hawk, which will avert any mischief if she *baits off*, or rebels. It would not be amiss, either to put on new jesses and bewits, if the old ones are at all at fault; which will prevent her suffering any disturbance in new dressing her, when her mewing is completed. It will also be prudent to examine, whether she is troubled with vermin of any kind; and if such be the case, treat for the same as hereafter directed.

2311. *The mewing apartment must be screened from cold and damp*, but neither must it be over-heated, nor deprived of a free circulation of air. The mewing-hawk is usually unhooded; but we would observe that much must depend on the disposition of the individual. Blome recommends the use of a *cop-hood*, by which we presume he means the rufter. A close hood in all possible cases should be avoided, on account of the feathers; and where hawks are well reclaimed, the hood of every kind should be altogether dispensed with. Bathing should be allowed while mewing proceeds, as it softens the skin, and facilitates the parting of the quills. In very cold weather take the chill from the water, but do no more. Mewing hawks should be fed twice a-day with fresh meat, its blood and juices being retained within it. The keepers of hawks should frequently visit them to make them familiar: this is most imperative; and, to further this end, they should be practised in coming to the fist as frequently, which will keep up due obedience, and, at the same time that it will exercise them, will aid the moult, and assist digestion. Keep mewing hawks clean, and by all means avoid the filthy custom of suffering their dung to accumulate around them, as is practised in aviaries, under an impression that the warmth engendered by the dung will hasten the fall of the old, and the growth of the new, feathers. Birds may be kept sufficiently warm by other means than that of forcing them to breathe an atmosphere impregnated with acrid salts. In a state of nature they are not seen thus to bury themselves in filth, and if it were advantageous so to do, nature would have given them such an inclination.

2312. *The old falconers* did not usually fly their hawks until six weeks had elapsed from the completion of their moult. Indeed, even then, although they may be full plumed, it is doubtful whether the quill feathers of their beams and train are sufficiently consolidated to fly with safety and effectively at the larger quarry, as herons, kites, wild ducks, &c. We shall conclude with an important hint on the subject of mewing, given by Sir John Sebright:—"As it is difficult to procure Icelanders and gerfalcons, these valuable birds are well worth mewing; but as slight falcons and goshawks are easily obtained, much trouble and expense will be saved by getting young birds every year; and as these do not cast their flight and tail feathers the first year, they will be in order to fly in the autumn, when the older birds will be in moult." (*Observations on Hawking*, p. 63.) Our reply to this is, that with the zealot in the sport, all these manipulations lighten the troubles of the falconer, instead of increasing them. How much more every one enjoys the work of his own hands, than that he obtains from others! It was implanted in our natures so to do, to prevent the evils resulting from idleness; but unless the reader be indeed a zealot, let him follow the baronet's plan.

SUBJECT. 3. *Imping the Feathers of Hawks.*

2313. *Imping is a somewhat curious process*, by which any feathers that may be accidentally broken in either the wings or tail of a hawk may be completely repaired. From what has been stated with regard to the powers of the wings and tail, both in the *sailing* and *rowing* tribes, it will be apparent that any damage done to either of these important parts, obliges the hawk to enter the lists with his antagonist with odds against him. To repair a broken feather is therefore essentially necessary; and, for the purpose, the falconer should be provided with pinions right and left, and with tail feathers also of each variety of hawk, all carefully marked in the order of their growth, by which any broken feather may be made good from a similar feather stored in the keeping of the hawk master.

2314. *The repairing process is as follows* :—The web of the broken feather is to be dexterously parted by means of a penknife at its thickest part, when the knife is to cut the shaft of the quill obliquely forward, carefully avoiding to do any injury to the web on the opposite side or edge of the same feather. Such is the practice of all professed falconers, and such are the directions of Sir John Sebright, our modern master in this art. The operator “next cuts the substitute feather, as exactly as possible, at the corresponding joint, and with the same degree of slope.” This portion of the process must be conducted with great nicety, as, upon the critical adjustment of the two portions of quill to each other, the perfection of the operation must mainly depend. To retain the applied portions to each other, a needle, sharpened triangularly at both ends, being first wetted with vinegar, or with salt and water, is to be passed into the centre of the pith, first of the native feather, and next into that of the additamentary one, dividing the needle equally between the two feathers, and doing this so exactly in the natural direction of the quill, that when the original feather and its additional piece are brought together, it shall be difficult to detect the artificial union. Keep the hawk very quiet; and the rust which arises on the needle by the means of the brine, will keep the whole in place.

2315. *Blome's directions for imping are substantially the same*, but that he recommends, instead of a needle, that the quill part of a fine feather be used, and that the yolk of an egg, or some other “semond,” be the bond of union. We have used the diamond cement in uniting similar matters with such success, that we do not hesitate to recommend its use for the purpose. To mend a train feather Blome proposes that a small peg of juniper wood be dipped into melted glue (we say, use the diamond cement), and that half of it being thrust within the stump of the broken quill, the substituted feather may be forced on the other half of the stick, the glue or cement retaining the portions firmly together.

2316. *A hawking cage, cage, or stage*, is used for the removal of hawks from place to place. One depicted by Reedinger in *fig. 355* is seen as an oblong frame; occasionally we have seen it circular. It should be made of light wood, and of such a shape and substance that the hawks can perch upon the bars with ease and safety to themselves. The wood of which it is formed should therefore be a little wadded, that the pressure in *holding on* may not hurt the feet: slight rods of hazel should be fixed across each end, to prevent the hawks from falling on the inside when they bait. The falconer, as the figure shows, places himself in the middle of the stage, and supports the weight by means of two straps across his shoulders: the hawks are hooded when thus moved, and are furthermore fastened to the cage each by its leash.



HAWKING-CAGE.

Where the distance is considerable, and the mode of conveyance is railway or carriage, Messrs. Salvin and Brodrick recommend a “spring box cage,” which is simply an oblong box without a lid, sufficiently large for the purpose, having broad padded edges for the hawks to sit upon, and supporting springs attached to the bottom for the purpose of lessening the jar; holes being made in the sides immediately below the padded rim for passing the leashes through. As these articles are inexpensive, a professed hawker would do well to be provided with both.

SECT. IX. *Operations required in the Training of Falcons and Hawks.*

2317. *When the wildness and ferocity of these birds are considered*, we are surprised at the power of that discipline which can reclaim them to so much obedience as is necessary for the purposes of falconry. These impatient subjects must be taught to bear all the restraints of close confinement, together with the incumbrances of jesses, bells, leash, and hood, and all without active resistance. A well trained hawk must further yield a ready obedience to every command, and even when soaring in the air, must instantly return either to the hand or lure when *whistled to* or *lured*. Having made prey of its game, it must likewise be equally ready to give up the quarry to the hand of its master, without showing any disposition to *bear it away*. To effect all this, it is evident that great patience and perseverance are necessary on the part of the trainer; and his task is the more difficult, inasmuch as only a momentary loss of temper may retard the process of reclaiming for weeks, and in some subjects it may frustrate it altogether.

2318. *To teach subjection to any wild animal*, it is essentially necessary, first, to make such animal aware that all attempts at escape are vain; secondly, that the gratification of the wants of nature are for the future to be looked for within its prison walls, and also from the hands of its jailor.

2319. *Of the numerous authorities on this subject*, Sir John Sebright is amongst the most recent. His *Observations on Hawking* are so just that they leave us in regret that they are so

concise: we gratefully own our obligations to them. M. Huber's observations on hawking also, ably translated and methodised by Mr. Griffith in his *Animal Kingdom of Cuvier*, we would recommend to the notice of the reader. The Abbe La Pluche likewise has written a summary of the practice of hawking, which he calls one of the "noblest and most profitable of pleasures." We can fully agree in his opinion of the high rank of this sport; but we are constrained to demur to his *dictum* with regard to its profitable character; that is, if he made use of the term profitable after its usual acceptation. On the contrary, this recreation is well known to be a most expensive one, although, unquestionably, a most fascinating and noble one. Turberville and Latham are old authors of repute; the latter, although he is redundant, is yet well worthy of the falconer's attention. Blome also treats largely and quaintly withal on hawking; and though a compiler only, is well deserving of notice. Many other old treatises on hawking, of various degrees of merit, are known to exist. Among these that of Markham stands conspicuous; but, without doubt, that of Sir John Sebright is the most valuable, and should be referred to by every one attached to hawking.

2320. *Hawk training* may be divided into that for eyasses, branchers, and haggards, or mature hawks. It will be well to bear in mind, that however other parts of the training may equally apply to short winged as to the long winged hawks, still it must never be lost sight of, that all long winged hawks are *brought to the lure*. Short winged hawks, on the contrary, are *brought to the fist*: but while we mention this as an arbitrary distinction, its precise meaning must not be mistaken; for it is not meant that the long winged hawks are not taken at all on the hand, either in training or when carried abroad. It is only intended to observe, that they are to return to the *lure* when preying; whereas the hawks of low flight return at once to the *fist*.

SUBJECT. 1. *Training of Eyasses, particularly those of the Slight Falcon.*

2321. *When eyasses are taken from the nest in an unfledged state*, it is requisite to keep them warm; but both at this time, and when further advanced in growth, still more particularly they should be handled as little as possible. In taking of eyasses, as yet but partially plumed or feathered, great care is required that none of their new formed feathers be injured, particularly those of the wings and train; and be it observed, that the more the birds approach to a fledged state, the more care is required that neither those feathers nor their talons receive injury. This caution extends to the whole period of their training also. Sir John Sebright recommends, that as soon as eyasses of either falcons or hawks are taken, they be at once put within a large hamper, which must be firmly fixed on its side about breast high, on the branches of a tree, in a retired situation. The lid of the hamper, when properly supported, will serve as a platform for the birds to come out upon to be fed. M. Huber recommends that, "for a bird of *high flight*, i. e. one of the noble tribes," a cask staved at one end, and resting on the side, be lined with straw, and placed on a low wall, or a hillock of earth, within the reach of the master, with the opening turned towards the east. For a bird of low flight, they use a kind of hut of twisted straw, set upon a tree of no great height, within reach of the hand. Certain planks are placed near the openings of these, on which the birds perform their first exercises, and receive their food. The food consists of beef or mutton, from which the fat and membranous parts have been withdrawn, and the edible part is cut into slender and oblong pieces. This aliment is given daily at seven in the morning and five in the evening, and the bird is excited to partake of it by one uniform cry, which he soon learns to recognise. On those planks, which serve as a table, the feeders always place the food for the high flying birds; but for the others the food is more commonly set on the ground, as soon as they are strong enough to descend and re-ascend. Both kinds are seen to increase their strength gradually; thus they first reach the places which are near them by jumps, and then by a heavy sort of flying, which the French call *monter à l'essor*. (*Animal Kingdom*, vol. vi. p. 139.) Thus circumstanced and protected, the young birds should be regularly and plentifully fed once or twice a day, in the manner already directed.

2322. *The cry or whistle hinted at as preparatory to feeding*, must not be omitted, as the young bird soon recognises it, and it serves to form such a connection between his own wants and his trainer's presence, as insures both his confidence and obedience. When eyasses are somewhat advanced in their growth, in addition to a liberal supply of the usual food, some variety is also proper. For this purpose pigeons, rooks, or other birds, may be given occasionally, which will not only whet the appetite, but also give a relish for food of that description; this change is indeed essential to their health.

2323. *The appearance of what are known as hunger traces*, will follow any considerable alteration of the accustomed quantity or quality of their food; and these marks should be watched for with much care, and must be immediately combated; bearing in mind, however, that prevention is better than cure. Sir John Sebright has well described the *hunger trace* as being a distinct line crossing every feather of the body, but most apparent on those of the wings and tail; where also it is evident that the defect is of most importance. "It may be seen," he further observes, "as a line of imperfection across the web of every feather neatly

marked as if a razor had been lightly passed across the wing." The consequence of this failure in the vital supplies is such, in some cases, that the feathers break away at the hunger trace. The trainers say, that omitting to feed one day will be followed by some appearance of the hunger trace, consequently we want no further proof that a plentiful supply of the best food is necessary to force the growth of the feathers, on the full development of which the powers of the bird so mainly depend. To increase the nutritious properties of their food, raw eggs are also sometimes added to it; and if raw eggs do really prove beneficial in these cases, it can only be because the eaters are themselves carnivorous.

2324. *Eyasses living at hack* increase in size and strength beyond those kept in more close confinement. Some eyasses are confined either in a room with open windows, or in open sheds, or on platforms, being restrained from moving further than their leash allows. Those, on the contrary, which are allowed full liberty, are said to *live at hack*; and when the benefits of free air and exercise are considered, it must be evident that the tackler, or hack-hawk, is by far the most likely to prove strong and good. At hack the eyasses are seen to increase in strength and vigour every day; their first flights carry them into the branches of the surrounding trees, they next perch themselves on the tops of the neighbouring buildings, and gradually they extend their flights to greater distances. The tacklers should have bells, and if they are rather weighty it will keep them more within bounds: and it is now that care should be taken to make any neighbours who may live near aware, that if such birds fall in their way, they cannot mistake them for others, both from the circumstance of their wearing bells, and from the confidence of their manner. Particular care also is now required that they be fed at stated periods, and always at the same place, which will insure their ready attendance on the feeder. When, however, they have learned to hawk for themselves, they will occasionally fail to return at feeding time. Should their absences extend to two or three days continuously, no time should be lost in *taking them up*, or they will infallibly absent themselves altogether. Sir John Sebright directs, that, to recover them, small pieces of meat should be fastened to the ground, having springs dexterously set around the meat so as to entangle their legs. A watcher, however, should be at hand to prevent them from injuring themselves by baiting. A bow-net may also be set so as to inclose them; for, be it observed, taken up they must be, if it be wished to secure them from total alienation.

2325. *Training for hawking purposes now succeeds*; it will, however, be well to remark, that much of what follows will apply generally to the education, not only of these but also of mature or passage-hawks, although it is more particularly intended for eyasses and hack-hawks. Any important variation required in the treatment of either from that of the other, will be noted as we proceed. We must however, in this place, take occasion to offer a few preliminary observations on *condition*, as it regards hawks in general.

SUBJECT. 2. *Conditioning of Hawks, a necessary prelude to Training.*

2326. *Conditioning*, in its sporting signification, is as necessary to the hawk as to the racer and hunter. In a state of nature the pursuer and the pursued are usually tolerably well matched; and, were it otherwise, many races of animals must become extinct. Conscious of this approximation to equality between the agent he employs in hunting and the game he hunts, the provident sportsman endeavours to lessen the chances of escape of the one, by artificially increasing the powers of the other, which is done by a process called *conditioning*, by which the animals so treated attain to greater speed and durability than is common to them in a state of nature. Having already endeavoured to illustrate the effects on horses of what is technically called *putting them into condition*, we shall now describe the practical part of putting hawks into condition. The strength of these birds, like that of other animals, is increased by liberal feeding, and by suitable exercisings, which in them likewise hardens the muscles, and adds greatly to the respiratory powers. All superfluous fluids, which increase the weight of the body and diminish its strength, are to be abstracted by *castings* as a natural, and *purgatives* as a more artificial process.

2327. *Castings are the indigestible matters thrown up from the stomachs of carnivorous birds*; and as it is well known that all the hawk tribes swallow the entire of the lesser birds and beasts on which they prey, it follows that their membranous stomachs being equal to the solution of the soft parts only, what remains, as the hair, feathers, bones, fur, &c. are returned by the mouth in a compact mass. This vomition being a natural act, and one that occurs after every meal made on whole animal carcases, it is evident that the act itself must have a direct tendency to cleanse out the stomach, and remove matters that might otherwise remain some time undigested to the injury of the health. When hawks are fed, as is usual, with beef or mutton, neither skin nor bone is given, the whole is therefore retained, and no casting takes place. Under this view there is every reason to believe that, nutritious as such food is, the stomach feels the want of this natural stimulus; and that the small indigestible remains which are too minute to be disgorged, as portions of tendon, mucous, and oleaginous matter, become irritants, the evils of which are to be obviated as follows:—

2328. *Artificial castings are given to hawks for the purpose of cleansing the stomach, and*

that by so cleansing they may restore that full tone to it, which a continued system of full feeding on solid flesh tends to injure. It is under this idea, therefore, that with their raw, or their soaked beef or mutton, we purposely intervene the entire carcasses of small birds or beasts, as mice for instance, which are easily procured, and make an excellent casting when fresh; for stale matters of every description, be it observed, offend the stomachs of hawks. The feet of fowls, or the feet of rabbits, hares, &c. with the fur on, answer the purpose of producing casting well; and when these are not at hand, pellets of tow, flannel, fur, or feathers, rolled up within the hawk's meat may be given. In answer to an inquiry, how this is to be done, we reply, that, by habitually rewarding them with some fresh morsels of flesh immediately after they have swallowed the casting, they will soon readily bend to it of their own accord, in hopes of what is to follow, particularly if sharp set. As hawks will not fly until they have disgorged, it is recommended to give them castings at night only, by which means they having returned them by the morning, become empty and are then ready for their game. Artificial castings, however, require much discretion in the giving, and very close observation of the state of the hawk; otherwise, when the castings are too strong and too often repeated, like an excess of physic to the hunter and racer, more mischief than good may be done. Latham, the great advocate for castings, says, that he does not fail to give plumage every night to a hawk in full condition ("well in-seamed") when daily flying at game; but when she takes no flights, he gives her no evening meal.

2329. *Small stones were much used by the old falconers* as preparatory to more active castings. Thus Blome observes, "If you should give her *castings* before her *stomach* is well prepared by the stones, it would signifie nothing; for they are, as it were, the key of the work, that the *grease* and *glut* may be stirred and dissolved, so as to be fitted to pass away in her *mewts* downwards, or in her *castings* upwards. The best time of giving stones is doubtless at night, until she be thoroughly clean, and then in the morning, but not until she hath put away her *supper* from above; half a dozen at a time are sufficient, and to do well they should be given above the *hand*; but for that every one hath not a ready skill, you may cast her, and give them so without danger, if it be carefully done. This course must be continued until you give her *plumage* in her *luring* and *training*; and then must you add the bending of the *wing*, being the short *feathers* of the *pinion*, with as much washed flannel as will make a reasonable *casting*; and remember in using *stones* and *casting* to observe this old rhyme —

‘Washt meat and stones will cause a hawk to fly,
Long fasting and great casting will cause a hawk to die.’

Stones used as castings should be gathered up when cast and washed. They may be also suffered to remain within reach of the hawk, who will often take them voluntarily when they are wanted. Celandine and numerous other herbs were given by the older falconers, when an active emetic was wanted.

2330. *Purgatives are much less frequently administered to hawks than castings.* A few grains of rhubarb, jalap, or aloes, as three, four, or five, may be given, encircled by a slice of beef. Should it be refused when thus offered, it must be forced down, which, however, must be done with great nicety, or the hawk may be injured, and at least some of the wing or train feathers may suffer. Markham directs a piece of aloes as large as a bean (a horse-bean we presume) as a proper purgative for a hawk; but we should recommend a smaller dose to be first tried. We would again remark, strong purgatives, as aloes, gamboge, jalap, &c. are only admissible when the bowels are much constipated. When, on the contrary, hawks are relaxed in their bowels, and their evacuations present an appearance of mucus, or yellow glair, and particularly if they be mixed with undigested food, give rhubarb. If the mewtings are black, then in preference give a grain of calomel, three grains of gum myrrh, and two grains of aloes. From what we have stated, the matter of which is equally derived from the best authorities, as from our own knowledge of the diseases of birds, it is imperative that a careful and frequent inspection of the castings and mewtings be made, to determine on the healthy or diseased state of every hawk that is kept. When in full health, the castings will exhibit nothing more than the refuse matters we have noticed, dry and pressed compactly together. If on the contrary, as before observed, they be seen moistened with glair or mucus, or streaked with morsels of undigested food, the assimilating powers of the hawk are impaired. When, also, the mewtings (stools) are seen to be of an undue consistence, as either thin and watery, or very hard and dry, there is equal reason to suspect that something is wrong within. If either castings or mewtings, or both, are black, the liver is probably affected; but if undigested food only is seen, the stomach is at fault. Hepatic remedies are proper for the first, and stomachic aperients for the last.

2331. *Vermis sometimes torment hawks, and prevent their thriving.* In these cases fumigations of tobacco or sulphur must be resorted to, or sulphur finely levigated, and mixed with a fifth part of stavesacre, equally finely powdered, may be forced into the feathers of the hawk, in moderate quantities, by means of a powder puff, observing to have the hawk hooded. General cleanliness, as regards every part of the *mewing* or lodging of falcons and hawks, will greatly tend to prevent the encroachment of vermin; and, above all, will

keep the atmosphere around them pure. Expose not your young hawks to wind or rain; but, at the same time, let them have plenty of air: be careful, we again repeat, to remove filth daily, and almost hourly, if you wish to promote vigour and high condition; likewise let the perches and resting blocks be attended to, that the feet may not elog and canker; and for the tender-footed hawk, cover them with matting.

2332. *Hawks are also apt to be affected with wheezings*, commonly denoting congestions in the lungs, which the old falconers call asthma and pantas. For this complaint we would recommend a mitigated diet, with a daily dose of a grain of antimonial powder, to be given in a tea-spoonful of honey of roses, which remedy we have ourselves tried on birds with great success. The old falconers employed coltsfoot in these cases; and, as they affirm, with much benefit. Worms in the intestines, also, sometimes rob hawks of their condition. As a vermifuge we would recommend that finely levigated glass be given with salt and sulphur daily, in proportions as follows,—of the glass five grains, of salt two, and of sulphur three. It was only with a view to simplify somewhat the medical treatment of the hawk, from the crude mass of numberless diseases, and remedies as crude as they were numberless, that we have entered on the topic; which, having brought to a conclusion, we shall resume our subject of hawk training. We train horses, dogs, and men, to increase their strength and hardihood; we also do the same with hawks, and with the same results.

2333. *The training of young hawks commences with putting on the hood, bells, jesses, &c.* If the pupil prove very wild and *rammish*, the ruffier hood may be first made use of; for although it is principally employed in the early training of the mature and passage-hawks, yet occasions may occur, in which its use will be found convenient for some tender and timid eyasses also. Be it, however, observed, that whichever hood is put on, the utmost care is required in so doing it, as to avoid injuring any of the wing feathers; and which is best effected by *brailing the wing*, as already directed, p. 698. With eyasses or hack-hawks these restraints do not often excite much resistance; nevertheless, with all hawks, young and old, temper and patience are requisite. When any considerable refractoriness is shown, wash the food, and let water be dripped over the bird, which, with deprivation of sleep for a night or two, will subdue the stoutest spirit.

2334. *Having advanced thus far*, and our eyass being furnished with hoods, bells, jesses, and leash, she is to be fastened to her block or standing (*fig. 356.*), which is either an



elevated perch, as seen in our cut, or otherwise is a solid wooden truncated cone, a foot high, and about nine inches broad on its upper surface, the under surface being sufficiently enlarged to prevent its overturning. To a staple in the block, the leash being made fast, so as to allow a sufficient length for the bird to move up and down, the arrangement is so far complete. The block is now to be placed in a shed, or in the open air during the day, but protected from the wind. A few hours will reconcile the hawk to this confinement; and the next lesson will be to *fast her*, the hand of the keeper being, of course, glove-guarded. It usually, however, takes some time to habituate a hawk to the fist; and therefore, to prevent her from *baiting off* (struggling offensively), she should be hooded during the initiatory lesson. Should she actually bait off her block, gently replace her; and when well settled, carry her about several hours in succession, during which she may be frequently stroked down the back with a feather, and at the same time be encouragingly spoken to. M. Huber directs, that when a falcon or hawk agitates herself very much, proving extremely refractory, and actually attempts to use her bill, in such case, besides lowering her food, let cold water be thrown over her head, or a stream may be allowed to drop from a wisp of hay or straw held over her, by which means she may be eventually rendered completely tame. As

the hawk becomes quiet and accustomed to her restraints, the brail may be removed from the wing, but the carrying on the fist must not be relaxed in; on the contrary, it should be persisted in almost through the whole of the day. A quiescent state being at length established, the hood may be occasionally taken off; when, as Sir John Sebright has it, she “may be allowed for a short time to pull upon a stump or pinion, from which she can get but little meat,” observing, however, by way of encouragement, to give her a few mouthfuls directly the hood is again put on: indeed, it is of the first consequence in this training, that every action which the falconer requires from a hawk, should only be a prelude to a reward. Thus, when on her block, she should be enticed to show a readiness to come to the fist the moment she is invited to do so; which must be first taught her by showing her food on the fist, and so continued, until it becomes a ready act of obedience in the hawk, with or without a bribe. It is, however, to be remembered, that these initiatory lessons must always be practised with a creance, or long string, which must be tied to the leash; and, if possible, these initiatory processes should be conducted under a gloomy light, and without any objects around likely to disturb the hawks under training.

2335. *To train the hawk to the lure* is also a very important part of the process, and with the eyass, in particular, it is not usually a very difficult one. Neither is it often very much more so with the brancher; but with the entrapped mature, or passage-hawk, it sometimes proves a work of much time and labour. The first step is to feed the hawk on the lure, being, as Sir John Sebright directs, “first made to come to it when held very near, then when held a little farther off, and next it is to be thrown on the ground to a small distance;

and thus she is to be brought by degrees to fly to it, and to seize it eagerly, however far it may be thrown" (*fig. 357.*). An assistant is now to swing the lure some distance from the falconer, who casts off the hawk; the lure, be it understood, is to be thrown into the air, when the



LURING THE HAWK.

hawk is flying towards it, but so that she cannot attain it until it falls to the ground, which caution is to be observed, lest she should be hurt by striking it in her flight. When this lesson has been repeated until the hawk has become eager to take the lure, the assistant is to swing it as before, but is to take it into his hand when the hawk is coming; he is then to swing it again as soon as the hawk has passed; and finally to throw it upon the ground when the hawk is returning towards him. M. Huber's directions imply, that when she has had so much training that she will pounce upon the lure from the whole length of her tether, they accustom her to know and examine

the game which she is destined to hunt. This is done by attaching the game to the lure, and allowing it to run or fly near the bird; being first attached by a packthread, but eventually doing it at liberty, until it is thought safe to trust to her free of all restraint. (See *An. King.* vol. vi. p. 202.) When properly trained, the hawk will learn to fly round the falconer, and bend its flight inwards, when in sight of the lure; nor should she be less obedient to the well known call, halloo, or whistle, but should follow and wait on the trainer in all his steps.

2336. In the *luring lessons*, the hawk having descended to the lure, and being busily employed, the trainer should walk leisurely around her, all the time encouraging with his voice, and occasionally giving her a favourite morsel from the hand. He should also occasionally, at such times, reward her by giving a full meal of some favourite food when she is taken up. It may be further observed, that the lure is not only used in training hawks, but it can likewise be employed in the exercising of them when out of work, and when they cannot be flown at game. Sir John Sebright, however, cautions the falconer "against keeping his hawks too long on the wing, that they may not thereby acquire a habit of *flying low*; it being a perfection in the slight falcon to soar as high as possible." During all these lessons it is essential that the hawk be accustomed to every variety of objects, particularly of horses, dogs, and men; indeed, noise and bustle of every kind should not alarm her. At first, however, no stranger should approach from behind, but it must be done leisurely in front of her; for without she become thus fearless of every object, her education cannot be completed, and consequently her hawking practices will be valueless.

2337. *Entering of the falcon to her game*, may be commenced as soon as she comes readily to the lure. When thus advanced, we will suppose her soaring aloft with her head inclined inwards, and ready to come to the lure; at which time the practice is to fly a partridge, confined however by a creance. This the falcon brings to the ground, where she is to be allowed to eat it, the trainer walking round her, and encouraging her during the time. The same process is to be repeated a few times, when she may be flown at game unrestrained; but to prevent her becoming cowed by any failure in her early attempts, it is recommended that a live partridge in a bag be kept in reserve, ready to throw up to her should she have failed in her first flight on other game. Sir John Sebright however observes, that "though this is the method of breaking eyasses to the lure practised by falconers generally (and, as we should suppose, such as he has employed himself), yet," he thinks, "it might be better done, and with infinitely less trouble, by using the young hawk, when *flying at hack*, to feed always on the lure." In this we heartily coincide, and from all the consideration we have given to the subject, we feel confident of its success.

SECT. X. Training of both Haggard and mature Hawks.

2338. *Training of passage and mature falcons* is somewhat more oporose than the training of eyasses. With them it will be proper to commence the process by weakening their powers of making their resistance hurtful to the trainer. To effect this, let the beak and talons be *coped*, i. e. somewhat blunted by a knife or file; in good hands the latter is the most efficient instrument; this done, *brail the wing*, and proceed to put on jesses, bells, and leash. As, however, there is a probability, that the striving against the ruffier hood even may be considerable, it will be prudent not to attempt putting it on until the wildness is in a great measure gone, by the subduing means already pointed out, as night watchings,

with water drippings, and very slender diet by day. The meat also that is given to such should be washed in water, to render its exhilarating powers weaker, by depriving it of its blood and nutritive juices; and they should likewise be fed in the evening only, that being sharp set in the day, they may take their initiatory lessons more readily; neither must this treatment be relaxed, until all rammishness has ceased, and until the subjects of it will suffer their feathers to be stroked down with a quill, and other marks of familiarity allowed, without resistance or *baiting off*. They should likewise seldom be left alone, indeed, it might be said, night or day; for if the trainer has them not altogether by his side, he should at least visit them, for the first two or three weeks, several times in the night. Hard as this may seem, yet, to reclaim either the Icelander, or haggard slight falcon, it is actually necessary, and we know that it has been done. One trainer was pointed out to us, whose wife objecting to this hourly disturbance, removed the birds into his bedroom, and from his bed, by the glimmer of his rushlight, he aroused his slumberers, and thus inured his presence to them by night as well as by day, until at last these wild subjects began to show pleasure in the company of their trainer, and to *rejoice*, according to the old hawking phraseology, in his notice, and indeed to appear unhappy in his absence.

2339. *Obedience having been unconditionally and fully exacted, indulgence should follow.* The rufter hood should now be occasionally removed, and the subject under training be allowed to look about her a little, at first in an obscure light only, gradually however increasing it, until the noontide glare is borne without disturbance. The putting on the full hood is next to be attempted, and in general it is not in this state a very difficult matter to effect. Occasionally, however, the operation does occasion so much resistance, that there is great danger of injuring the hawk, either in the body or plumes; in which case, What is to be done?

2340. *To make a refractory hawk to the hood*, Blome's directions are, "You must be provided with a hood of some light colour, as green, red, or yellow, which hang on your little finger of the same hand whereon you carry your hawk, and let it hang so that it may be always in her sight, especially at such times as you feed her. This do for about a week, or until you find her acquainted with it so well as to search through the hood for the meat. If you interpose it when she doth this boldly, you may essay to bear a little hard with the hood against her head, by which means she will in about a month come to *hood* and *unhood* herself, as often as you please. And whereas before you used to restrain her from eating, let her now eat moderately when she is *hooded*, and never but then; nor should you take off her hood until feeding time." Being now effectually restrained, your falcon must be accustomed to take to the hand when presented; she must also be familiarised to noise and bustle, as well as to the sight of men and animals in motion; and the hood now rendered familiar to her, should be frequently put off and on; nor must these ceremonials be relaxed until she is thoroughly *reclaimed*. It is in the vigorous prosecution of these parts of discipline, over and above those practised towards eyasses, that the difference between their trainings principally consists.

2341. *To make the passage-hawks to the lure*, it is enough if they will fly to it when swung round at a distance, as it would not only be difficult, but it would be also unnecessary for the purposes to which they are applied, to teach them to *wait on*. What we said on the luring of eyasses will mainly apply here also: but, as before observed, more close training is certainly requisite for the haggard; and the more northward the habitat of the falcon is, the more strict must every part of the discipline be, and for the gerfalcon most of all. We have said little about practising the passage-hawk to the hand, but, as already observed, though technically they are not hawks of the *fist*, but hawks of the *lure*, they are to be familiarised to the hand almost as much as the others, and therefore must be taught to leap from the stand, or the ground, on the hand as soon as presented, where they must receive the same attentions and the same rewards as hawks of the fist.

2342. *Training the passage-hawks and northern falcons to flying at their game*, follows the exercises we have described. Initiatory lessons at flying at living quarry now follow. A pigeon is usually the first game they fly at, one or more of these birds having already been given to be raked from the hand. Proceed therefore to throw one up to her in a creance, and if she shows herself ready at this, shorten the flight of another, either by taking out two quill feathers of each wing, or by clipping off a portion of the whole, and having so done throw it off before her, she being now wholly at large. The game that the falcon in training is intended to fly at should be made particularly familiar to her, which is best done by using a representation of it before her during her initiatory practisings. Thus, by the French trainers, a black hen is attached to a stake to teach the hunting of crows, a red hen is used to imitate the kite, and a grey turkey-hen represents the heron. At length a crow, a kite, or a heron are thus treated by them; the bills and talons of the former are blunted, and the beak of the latter being cased or much shortened by the saw (a much less cruel practice is that of inserting the point of the bill firmly within the branch of a piece of elder, as suggested by Sir John Sebright): one or the other, as the case may be, is attached to the stake, and of course soon sacrificed; after which the hawk is practised at either of these at liberty,

but at minor elevations at first. Many of these hawks, however, require some trouble before they can bring even their rapacious courage up to the sticking point to attack a heron. Sir John Sebright tells us, nevertheless, that "they may generally be brought to it by flying them at a barn-door cock of a light colour; and still more effectually by tying meat upon a heron's back, and practising them daily in feeding on it there, observing to guard the heron's beak by the humane method just noticed. In the early flying practices, should the falcon fly unsuccessfully at its game, it is recommended not to take the falcon down by the common lure, but by a live pigeon held in a creance, as a disappointment of this kind, without a kill at the end of it, might be more fatal to the hunting propensities of the falcon than twenty blank days to the foxhound.

2343. *The treatment of working hawks requires some notice also.* The old falconers, as we have already observed, thought little of flying their hawks every day; the moderns think three times a week enough, and it certainly is so. Even with this work, they must have liberal feeding to keep them up to the mark. On the day before flying, hawks should have a moderate meal only; when full fed they are apt to be heavy, but when sharp set, as we have already observed, they set about their work in earnest. It is, however, well remarked by the master in the art we have so often quoted, that "the condition and habits of each bird must be considered, and that the feeding be proportioned accordingly; it is only the very strong and high conditioned hawk that should be allowed to fly two successive days." When this is done, a more plentiful allowance of food should be apportioned to each day's meal than at other times. We must not be understood as hinting that the hawk, which flies twice or thrice a week only, is not to be well fed; on the contrary, she should have a plentiful meal on the days she has flown, and it should be given immediately she has done it. When she is *gorged*, it is proper that she remain at rest two whole days, as it would be unnatural and hurtful to fly her in less time. In this respite we only imitate the natural habits of these birds, which incline them to solitude and almost total inactivity after they have preyed abundantly.

2344. *The gorge* (so called) is a very full meal, given once in four or five days, it being supposed that in the intervening days a moderate but a sufficient quantity is also given. It is as essentially necessary to keep up the working hawk in full bodily condition, as it is that it should not become too full and gross. To judge of the condition of a hawk in full flight, weigh her and feel the sides of her breast: if she be light, and her breast-bone prominent, feed her more liberally. If, on the contrary, on turning up her train feathers, her vent is seen to be unusually red and prominent, her eyes bloodshot, and her breast laden with flesh, lower her diet, and let her have full castings; and if these are not sufficient, give once a week a gentle purge of two, three, or four grains of rhubarb or aloes, according to her kind, size, and strength. The actual quantity of meat to be given, cannot with propriety be stated, as the wants of the birds will differ from each other, and that from day to day also, as they work or rest. About a third of a pound of beef a day is a fair quantity for a slight falcon, so in proportion for other hawks in full work. It is, however, to be observed, that their food also should be varied, for reasons already hinted at.

SUBJECT. 1. *Training of the Merlin and Hobby.*

2345. *The training of the merlin*, from a natural docility in her nature, is not attended with much difficulty. All the usual training processes are employed, which in a very few days succeed so completely, that the merlin will fly to the hand held out even twenty or thirty yards distant. When thus advanced, she must be *made to the lure* by the following method: a lark, secured by a string, is thrown off at fifteen or twenty yards' distance, which being seized by the merlin, she attempts to fly off with it, which it is the object of the trainer to prevent. He therefore jerks the string which is fastened to the lark, and if fortunately the body is thereby pulled away, the head only being left with the merlin, the lesson is accomplished. The body of the lark is now partially buried at the feet of the trainer, and the hawk returning thence to possess herself of it, which not being able to do, but, on the contrary, finding herself rewarded with meat instead of the bird, soon learns that attempts to *carry her game* are fruitless, but that to return with it to her master is the certain means of obtaining a reward. The old falconers were used to fly merlins at partridges with effect, but a cast was usually employed, and a cast is also used for snipe hawking, which affords very excellent sport, and often a very diversified chase.

2346. *The training of the hobby* is essentially the same with that of the merlin, but it usually requires more time to accomplish. As a sporting hawk it is used for the same game as the merlin, but with rather less effect, not being so good at the mount as the merlin, although somewhat larger. It has been used to fly at partridges, but it is better matched with quails, landrails, snipes, larks, blackbirds, thrushes, &c. Sir John Sebright informs his readers, that both the merlin and the hobby may be brought to *wait on*; but although the hobby is the more tractable of the two, yet, if we are rightly informed, it is more difficult to bring the hobby to this than the merlin. Colonel Montague asserts, that the hobby has been principally employed in a sport, called *daring*, by which partridges,

quails, snipes, and other birds which will lie, are taken. The hobby being cast off so frightens the birds, that they will suffer a net to be drawn over them in preference to rising. The colonel also considers the hobby to be a passage-hawk, and in some instances it may be so; but Sir John Sebright, who does not usually take any thing on trust, asserts that both the hobby and merlin breed in England; and we are equally certain of it also, having many times seen their nests and taken the young.

SECT. XI. *The Training of short winged Hawks.*

2347. *Essential variations* are requisite in the management of the sailers from that employed in the education of the rowers, that is, between the hawks of low and high flight; the necessity of which will appear, if reference be made to what we have already stated with regard to the sailers and rowers, or the ignoble and noble raptorial tribes.

SUBJECT. 1. *Training of the Goshawk.*

2348. *The goshawk stands at the head of the short winged hawks*, and, like the long winged, may be taken from the nest, or be procured by netting or by trapping when full grown, these latter being generally preferred. Our present subject is a hawk of the fist, and is consequently not to be hooded except when travelling, or during its early initiation, to keep her quiet. About the fifth or sixth day the hood may be finally removed, as many of these birds soon become reconciled to confinement, and will readily take food from the fist. Goshawks and others of the short winged kind rest on a perch formed from a pole, about an inch and a half in diameter, which Sir John Sebright recommends to be placed horizontally, at four feet from the ground, under a tree in fine weather, and to be removed under shelter when it is foul. A piece of woollen cloth, or matting, should be nailed to its surface, and should hang to the ground, so that the hawk may raise herself up by it when she has left the perch or *baited off*. She is to be fixed to this perch by a short leash of six or eight inches in measure, the swivel of which is to be tied close to the top of the perch. The shortness of the leash, and the presence of the matting by which she can creep up, prevents her injuring herself by passing under it, and by so doing to twist her leash around it. As these hawks are carried unhooded, and are not brought down to the lure but to the fist, it is evident that a singular degree of obedience must be taught them, which fortunately their nature in general cases inclines them to in a greater degree than that of the long winged hawks. The same means, however, are employed to make them gentle by feeding them very frequently by hand, giving them very small quantities at a time, and by constantly carrying them about on the fist, with the precaution of having the jesses wound round the fingers. The absolute necessity of keeping the wild hawk without sleep and always in hand, is constantly insisted on in the old hawking instructions. Bert's approved *Treatise on Hawking*, published in 1619, has the following:—"I have heard of some who watched, and kept their hawks awake seven nights and as many days, and yet would they be wild, ramish, and disorderly." This "gentleman" is altogether a curiosity; he reared hawks himself, and with such success, that he proudly boasts he had sold a simple goshawk and tereel of his training for one 100 merks. From his own account, the greatest part of his time—almost the whole of it, except when he slept—must have been occupied by his birds. "There cannot," he says, "be too much familiarity between a man and his hawk." Markham also advocates familiarising the hawk to her master by his looking her full in the face, using her to all sorts of company and loud noises, all which is true to the letter.

2349. *Nothing familiarises a hawk more than tempting her from the perch to the hand* by offering her some favourite food, as the stump or pinion of a fowl; and we again repeat that, during the probationary stage, she should be left as little alone as possible, except at the necessary hours of rest. By persevering in this treatment, the wildest goshawk may be taught to come readily to the fist when held out to her, and from almost any reasonable distance, as forty or even fifty yards, whether she be on the ground, on the perch, or lodged on a bough. This method of training M. Huber varies, by tying a living pigeon to a stake, which the hawk is allowed to seize by the head at the length of her leash, when the attendant pulls away the body, leaving the pigeon's head with the hawk, who, having devoured it, will follow and come to the hand from almost any distance to eat the remainder. If her intended quarry is to be the partridge, these lessons must be practised with them after the same manner, or whatever game she is principally to *fly at*, that game should be employed as a lure in the initiatory exercises. Sir John Sebright, however, appears to entertain a very mean opinion of goshawks for the purposes of falconry. He allows that they may be employed against pheasants and landrails, but for partridges he considers that they are too slack metttled to fly willingly at any, and that all but very young birds will distance them; he however acknowledges that the very worst will take rabbits. We must nevertheless remark, that many falconers of repute, particularly those of the Continent, prize the goshawk much, and use them extensively.

2350. *The training of the sparrow-hawk* does not differ from that of the goshawk, which it

resembles in every respect but in size. It flies very rapidly for a short distance : indeed, no one who has observed her when hawking for small birds, but must have been struck with the velocity of her stretches at these times. She may be entered at partridges with effect ; and particularly in the early part of the season she proves very efficient ; and indeed, according to Sir John Sebright, she is the best of all the hawks for landrails. The sparrow-hawk may likewise be employed against other of the smaller winged tribes. It is said that a gentleman in Ireland flies them at quails also very successfully. Sir John Sebright once took a wild partridge with a sparrow-hawk of his own breaking, ten days only after the bird had itself been taken wild from a wood. As implicit reliance may be placed on the assertions of this most respectable and talented sportsman, the fact is at once a proof of the occasional tractability of this hawk, and of the excellent management of the baronet. On the subject of training and hawking with the short winged hawks generally, the same gentleman offers the following important remarks : — “ That to be effective, they must be kept in high condition ; that they cannot fly when any wind is stirring ; and also, that, upon the whole, they are altogether more difficult to manage than stronger birds.”

2351. *Of the training of buzzards*, we omit any particular description ; in the first place, because it does not differ from that employed on other of the short winged hawks ; and in the next, because, when trained, these hawks are of little worth. Each variety of buzzard is usually cowardly in its nature, and sluggish in its habits ; and its talons also are too weak to be effective against any such quarry as, considering the size of the flyer, might appear a proper object to be flown at. The vision of the buzzard, likewise, is such as to render it rather adapted to crepuscular than to noontide hunting. Conscious of its deficiencies, it will wait for hours in apparent tranquil indifference, while watching an unfortunate bird, who, transfixed with fear, is afraid to move. We have somewhere met with an account of a pheasant, which was observed to be attempting to conceal itself in some long grass from the observation of a buzzard, which was perched in a tree, evidently watching its motions. The observer having waited two hours to watch the result, became tired, and left them both in the same situation. Another relates that a pheasant seen to secrete itself thus from the attack of a buzzard in the evening, was actually found the next morning in the same situation as it was seen the previous evening, being still watched by the vigilant buzzard. The former we can readily believe, from what we have ourselves seen in our evening walks ; the latter, though by no means impossible, yet creates some doubts.

SECT. XII. *The Game flown at by British Falcons.*

2352. *The quarry at which hawking amateurs fly their birds*, are either of the *plume*, or of the *fur*, i. e. either birds or beasts. Some hawks are taught to fly both at the fur and plume ; but either for want of sufficient patience, or sufficient dexterity in training, it does not often succeed, and therefore is not often attempted. It is true, that whatever bird or beast the hawk has been first broken to, she or he is apt to *fly* best to that ; but nevertheless, it is by no means very difficult to break hawks from flying at any accustomed quarry, and to make them equally eager in the pursuit of another. And the same versatility of talent, both in the trainer and the pupil, will eventually bring a hawk to fly at either fur or plume ; but the bird must be a tractable one, and the trainer both a patient and a clever one. Almost all hawks under training are taught to fly at pigeons, because these birds are readily procured. It is therefore necessary to break them from these, before they are entered at their intended game, which is thus managed : — Have ready a living bird or beast of the kind the hawk is intended principally to fly at in future ; if it be of the plume, shorten its flight by the method before directed ; or, otherwise, retain it loose in a creance. Now let a pigeon fly so distant from the hawk, that she will not be able to overtake it. On the return of the disappointed hawk, throw up another in the same way ; and, by repeating this a few times, she will be completely broken from flying at that bird. It is now that the game intended for her future pursuit is to be let fly, which she will readily *bind*, and will thus become fixed to that quarry in future. If she is to be varied in her objects of pursuit, she must be allured by each of them in the same way ; and if she has been properly reclaimed, but particularly if she have a perfect confidence in her master, and a personal attachment to him, she will the more readily learn to vary her flight to each quarry. Nothing effective is to be done with hawks without engaging their confidence and regard. Harshness makes them haggard and stubborn. How much it is to be desired, that a conviction of the power over animals by means of kindness, in preference to the exercise of cruelty and violence, would become universal !

SUBJECT. 1. *Heron Hawking.*

2353. *The heron (Ardea major Linn.)* is too well known to need a very particular description. Long and large as it appears, when stripped of its feathers it seldom reaches beyond four or five pounds in weight, although its wings extend from tip to tip more than five feet. Its six inch bill is very strong and very pointed, and its edges are slightly serrated, to give it a firmer hold on the fish it takes. The middle claw of each foot is also

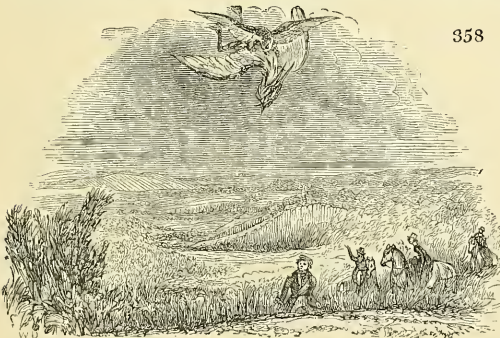
notched, without doubt, for the same purpose. The plumage of the heron is of an ashen gray, but pleasingly variegated; and that of the back of the head, more particularly of the male, is elongated into a flowing crest. The plumes of the heron were, in olden times, used as ornaments for the caps and helmets of the nobility, and they still appear as part of the costume of the garter. At the present day the pendent feathers of the neck, gained from the white male common fowl, are dyed for the adornment of the military hats and caps. Wilson tells us the feathers of the heron are, to the present day, an highly esteemed ornament in North America, and are to be seen in the market of New Orleans for sale. Chardin informs us that they were equally in request in Persia; and that, to obtain these feathers, the bird is entrapped, and being robbed of its plumage, is again let loose. In the breeding season herons congregate, and are ranked under the term of platform builders, "for though they construct a shallow depression in the centre of the nest, which is, by all the species, if we mistake not, lined with some sort of soft material, such as dry grass, rushes, feathers, or wool, the body of the nest is quite flat, and formed much in the manner of an eagle's aerie, of sticks crossing one another, and supported upon the branches, or between the forks of high trees. All the species also are social, nestling in large communities, after the manner of rooks, though instances are not uncommon of individual pairs breeding solitarily." (*Arch. of Birds, Lib. E. K. p. 184.*) Belon tells us, the meat of the heron was royal food in France; and also, that it was, in early times, little less prized in England.

2354. *Established heronries* were originally very numerous, and were kept up with great attention, and every encouragement was held out to these birds to attach them to the locality. The heronries at present existing in this country, we are informed in the work just quoted, are "in Windsor Great Park, on the borders of Bagshot Heath; at Penshurst Place, Kent; at Hutton, the seat of Lord Caernarvon; in Gobay Park, on the road to Penrith, near a rocky pass called Yew Crag; on the north side of the romantic lake of Ulswater; at Cressi Hall, six miles from Spalding in Lincolnshire; at Downington-in-Holland, in the same county; at Brockley Woods, near Bristol; at Brownsea Island, near Poole in Dorsetshire." Colonel Montague notices a heronry of Scotland in a small island, in a lake, where, there being only a scrubby oak, much too scanty to contain all the nests, many were placed on the ground. "Besides these," he says, "we are acquainted with a small one in the parish of Craigie, near Kilmarnock in Ayrshire." Didlington, near Brandon in Norfolk, Messrs. Salvin and Brodrick inform us, has long boasted its heronry, which they are happy to say is still carefully preserved. It was near this that Colonel Wilson kept his heron hawks for many years. Formerly heronries were very strictly protected by government, and legal enactments were made for that express purpose; but those times are gone by. Taking young herons from the nest was then fineable to the amount of 10s., which was a great sum in those days; and to kill a heron subjected the offender to a fine of 20s. A temptation to the destruction of this bird beyond the protection of the fisheries, existed in the value set on its flesh, which at that time of day was in as high estimation as that of the peacock; although, in the language of trade, both are now "at a discount." We have ourselves eaten the heron; the flesh is dark, but not of a bad taste, and much less fishy in flavour than the flesh of most piscivorous birds.

2355. *The daily visitations of the heron* to its feeding places are watched by the falconers, who station themselves to the leeward or down wind of the heronry, so that the heron on its

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return must fly against the breeze, which gives a great advantage to its enemy. As soon as one is discovered on the return, a cast of falcons is let loose, who, catching sight of the quarry, rise in pursuit (*fig. 358.*). The heron, instinctively aware that its life is at stake, prepares for the fray by disgorging the contents of its stomach to lighten the weight of the body. The coursing falcons ascend the airy vault in spiral gyrations, by which the atmospheric resistance to their flight is lessened. These circlings, it has been observed, have frequently the curious effect of



HERON HAWKING.

presenting the three birds as flying in different directions; whereas the real intentions of the two hawks are steadily directed to one point, which is that of contact with the heron, whose entire efforts are as steadily engaged in avoiding it. To effect this, the affrighted heron strenuously endeavours to rise above the hawks, who however, by superior power of wing, commonly succeed in getting the upper station, from which one presently makes its stoop; and happy it is for the poor heron if he can evade the blow,

which he occasionally does, either by shifting his station, or by receiving the falcon on his sharp bill, which instantly transfixes it. This danger is however denied on authority, but we feel assured that it does occur. The second hawk, if the first fails, stoops in his turn; but the meditated blow of this also is frequently evaded like the former. The trio then still rising higher and higher, the sight becomes interesting in the extreme, and the spectators are scarcely less agitated than the feathered warriors above. At length another stoop takes place, and the fatal seizure is made by one hawk, while the other *binds* to his fellow, and all three quickly descend together, but not with a dangerous rapidity, as their powers of inflation and the action of their wings break the fall. It is now that the mounted horsemen make the best of their way to the assistance of their falcons, and their first efforts must be directed to secure the head of the heron, that the sharp beak may not take effect on one or both of them. This danger is best avoided by any one putting his foot on the neck; and indeed is the only safe way, such is the savage fierceness and great power of the wounded heron.

2356. *The heron of olden times*, if we believe all that is told us, had some singular means of defending itself not recognised by us moderns, although there are not wanting some veritable proofs of annoyance offered by the pursued towards the pursuer, particularly by the *beasts of stinking flight*. In the *Booke of St. Alban's* is found the following note:—"The heron, or hernsew, is a fowl that liveth about waters, and yet she doth so abhorre raine and tempests, that she seeketh to avoid them by flying on high. She hath her nest in very loftie trees, and sheweth as it were a natural hatred against the gossehawk, and other kind of hawks, and so likewise doth the hawk seek her destruction continually. When they fight above in the aire, they labour both especially for this one thing, that the one might ascend and be above the other. Now, if the hawk getteth the upper place, he overthroweth and vanquisheth the heron with a marvellous earnest flight; but if the heron get above the hawk, then with his dung he defileth the hawk, and so destroyeth him, for his dung is a poison to the hawk, rotting and putrifying his feathers."

2357. *Heron*s are taken for *hawking purposes*, by placing around their nest strong nooses, so arranged, that when they come to visit their eggs, their legs may become entangled therewith. About sunset a man placing himself to leeward of the nest in close concealment, having the line or lines to which the noose or nooses are attached, by drawing them tight, can usually succeed in taking one. It is necessary, however, to preserve the life of the heron, not only that food be forced down its throat, but also that it be prevented from disgorging it when there, by placing a bandage around the neck, sufficiently tight to prevent vomition, but not so much so as to interfere with respiration. Without this precaution, such is the sulkiness of this animal, that it will infallibly starve itself. Nevertheless, such also is the power which skill and perseverance have in taming the most intractable animals, that even the heron has been brought to assume all the fondness of a pet; in proof of which Sir John Sebright offers the following interesting fact, which occurred within his own knowledge:—"A full grown heron was taken in a decoy, and brought to J. D. Downes, Esq. at Old Gunton Hall. At first, he was obliged to treat it in the way that I have described, by cramming and *tying down* the food; but at length it became so tame, as to follow him on the wing to the distance of some miles, to come into the house when called, and to take food from the hand." (*Observations on Hawking*, p. 39.) In the reign of Henry VIII. herons were imported for the amusement of hawking with them, and we may form some idea of the value then put on these birds by the importation duty, which was 13s. 8d. on each heron; no inconsiderable sum in those times.

SUBJECT. 2. *Kite Hawking.*

2358. *The fork-tailed kites* have long been flown at by falconers. In our own days Lord Orford, Colonel Thornton, and others have practised it. Lord Orford particularly pursued it in the neighbourhood of Alconbury Hill; which being in a campaign country, afforded kites in plenty. To the leg of the great owl, when it could be procured, or in default of that, to the leg of the common white owl, was appended the brush of a fox: though, we have little doubt but that, barring its less sporting-like appearance, the leg or wing of a large fowl would have done as well, and certainly would equally shorten the flight of the owl. Thus dressed, the owl was thrown up within sight of the kite, who, so lured, descended to its ruin; for it was itself immediately attacked by the falcon in waiting, and quickly raked. For this sport the gerfalcon was preferred, her size and strength making her the fittest antagonist for such a quarry. Blome thus describes kite-hawking:—"The day being warm and clear, you will soon discover a kyte cooling herself in the air; then let your owl fly, and the kyte will not fail to make near her to gaze upon her; and when the kyte is descended pretty near her, then let fly your hawk; and the kyte, perceiving the surprise, doth endeavour to preserve herself, by mounting up and winding the most she can. And here the combat begins, but oftentimes none can see where it ends, both mounting out of sight; but in the end the hawk becomes victor, and by main strength and courage beats down the kyte, yet not without many turns and wrenches in the air, to the great pleasure of the spectators." (P. 29.)

SUBJECT. 3. *Pheasant Hawking.*

2359. *A goshawk is usually employed for the purpose, but she must be extremely well reclaimed or broke to this particular sport, which differs much from partridge hawking, or*



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any other hawking in the open air. In cover there will be much bustle; and men, dogs, hawk, and pheasant, will probably be mixed up in one confused mass; it will require, therefore, a very well manned hawk for the purpose. The leaves also should have fallen to further the business; indeed, it can be attempted with only a dubious chance of success until then: a pheasant being sprung by the dogs, call them in and cast off the hawk; if she succeed in raking her prey, approach her carefully, the dogs being strictly kept in check. Do not attempt, however, to take the pheasant from her, but walking around her, encourage her with such tones of voice as you are accustomed to use when she behaves well. When you observe her quietly pluming her prey stoop down, and severing the head of the pheasant from the body, allow her to retain that, but draw the body away. When you wish to *fist* her, have a small piece of meat in readiness to offer her as a lure; when, having hooded her, reward her with such portion of food as you are accustomed to give on these occasions.

2360. *To take a pheasant from the perch*, Blome directs the following initiatory process: — “Provide a dead pheasant, or in preference a living one as better, which take along with you into the wood, and when you are disposed to call your hawk for her supper, and as she is drawing and attending after you for the same (having a convenient pole ready for that purpose), call your spaniels about you to make them *bay*, and suddenly breaking the neck of the pheasant, lift it upon a bough, that the hawk may have a sight thereof, and with your voice calling and encouraging her to come in to seize it; and if she pulls it down, be sure that you so rebuke the dogs, and keep them at command, that at her descending they give her way, and that she may plume and take her pleasure thereon; which, in a short time, will so embolden her, that when she seeth a pheasant take *perch*, she will immediately seize it and pull it down: nor will she be fearful of the dogs; for when they are once *managed*, and brought into good subjection, they will know their duty, and be fearful of transgressing, so that you may venture them if you were absent; but be sure you have no strange dogs, for one may spoil your sport, drawing the rest into errors, and cause them to hunt after any thing. Nor is it convenient to hunt with many spaniels, for two or three couple are enough to range and beat about a large wood, and to perch a pheasant.” (P. 35.)

SUBJECT. 4. *Partridge Hawking.*

2361. *Hawking of partridges* is more common than hawking of pheasants, for the latter being mostly found in woodland scenery, the sport offered is thereby rendered neither so convenient nor so effective. Partridge hawking is followed with both long winged and short winged hawks. The scene of practice is commonly on large fields, or open tracts of country, where the horsemen and company generally can beat in line, and the attendant falconer or master, being well mounted, can ride forward, and be ready to receive the quarry. Either pointers or spaniels are necessary, or both. Sir John Sebright says, that high ranging pointers are the best dogs for the sport, for the birds will often lie to a dog, when they will not suffer horsemen to approach them. Neither, provided the hawk used be well broke, is it necessary that it should be very near the dogs when they point, or near the birds when they rise. He also observes that, if the hawk be within two or three hundred yards it will be near enough, if her *soar* be high and she directs her view inwards. In case she should not do this, she must be lured by the voice, or constrained into noticing by the lure itself. It is however observed, that it is better that a flight be lost by the hawk ranging too

far, than that she should be lowered or confined in her pitch by too much luring. Sufficient time should by all means be allowed to the hawk to mount well before the game is sprung; for being sufficiently elevated, her range of vision will be equal to take in the whole expanse around her, and incline her to watch the moving scene more attentively than if she were nearer.

2362. *The partridge being flushed*, the hawk will stoop with astonishing rapidity, and seize on it: at which time neither horses, dogs, nor company, should press forward; on the con-



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trary, they should permit the falconer only to advance, who, approaching the hawk with caution, must walk quietly round her, when, gently kneeling down with his arm extended, as though in the act of feeding the hawk, he should lay hold of the partridge, when, by the hawk's grasp on the bird he should place her on the fist. This done, put on the hood, and reward the hawk with the head of the quarry, and if she be not intended to fly again, let her be fed immediately. Should the hawk, however, have missed her quarry, and if, on the contrary, it has been *put in*, that is, driven to a bush or hedge, and so cannot be quickly retrieved and re flown, then in such case the hawk must not be disappointed, particularly if it is its first bird, otherwise, on the next occasion, should she rake her bird, she will, in all probability, *carry it* also, *i. e.* fly away with it from the fear of having it taken from her. But when having, as we have said, missed her quarry, if a live partridge (of which there should be always one or more in readiness when new made hawks are flown) be thrown up, then, having raked it, she must be allowed to eat it also; and having so done, on her next flight she will in future use her best endeavours to avoid a similar disappointment.

2363. *A somewhat different method of partridge hawking* is practised in the latter part of the season, when the country is very bare, and when the partridges are often very wild, and lie indifferently even to the dog. In such cases it is recommended that the company "draw up in line at fifty or sixty yards' distance from each other, and gallop across the plain with a hawk upon wing," the falconer being in the centre of the line, that he may regulate the pace by the situation of the hawk. Sir John Sebright informs us, that this method of partridge hawking has afforded him more sport than any other; and that, when the face of the country was so bare and the birds so wild, as to make it impossible to approach them in the usual way.

2364. *Flying Hawks* repeatedly over the same country does not appear, Messrs. Salvin and Brodrick inform us (p. 62.), to have the effect of banishing the game from the ground, as is often supposed; the same covey of partridges may be found day after day, all through the season, almost in the same spot, and if not subjected to the persecution of "vile saltpetre," will afford many an exciting moment to man, beast, and bird. The goshawk was the bird chiefly used for the purpose of partridge hawking, though sportsmen differ as to its merits, Sir John Sebright thinking very lightly of its powers against them, while Messrs. Brodrick and Salvin think it is best confined to fur hawking, in which it appears to advantage.

SUBJECT. 5. *Rook and Magpie Hawking.*

2365. *Rook hawking* is with many a very favourite diversion. It is practised with passage falcons, and occasionally with eyasses. With falcons which have long flown at hack, and have been accustomed to prey for themselves, Sir John Sebright informs us he has likewise experienced excellent sport. The rook, strong in flight, is no less bold than wary; and his stratagems to elude his pursuers, which are usually two, are great, as the resistance he offers is worthy of his size. But notwithstanding this, the *swoop* being once made, he is usually brought to the ground.

2366. *Magpie hawking* is also practised with either passage falcons, hack-hawks, or well trained eyasses. On any open ground which presents a scattering of low trees and brush-wood, excellent sport is often afforded by them. But as this bird is most dexterous at shifts and turns, it requires not only that two hawks be taken out, attended by numerous helpers, but likewise that all the other means employed against him should be of the most

effective kind. It is the habit of the magpie immediately it sees a hawk to retreat to a bush, from whence it is difficult to drive him, for as the hawk *waits on* in the air, and cannot make her stoop until the magpie moves, so cunning mag sticks to the bush until actually beaten out of it. When however he is driven out, the hawk will *stoop* at him as he makes for another bush. Should the pitch of one hawk be too high, and cause her to miss her quarry, the other hawk being just cast off will probably arrest his progress. Even with these advantages, and the addition of several assistants, the shifts of the magpie will frequently be so dexterously made, that both hawks will fail to strike him. Shy as he is at other times, the pie will now seek to shelter himself among the men and horses, or he will sneak into any nook or corner. Having escaped the first attack, poor mag endeavours to wend his way to some strong cover, if any such be at hand, which must be prevented by the activity of the mounted attendants. If he take to a hedge, the utmost effort is required by all the attendants, particularly of the horsemen, to force him from it, by cracking their whips and riding before and behind him, when, if he once faces the open, he is *raked*. Sir John Sebright enters into an animated detail of this sport, which he considers as superior to every other kind of hawking.

SUBJECT. 6. *Waterfowl Hawking.*

2367. *Brook hawking*, as it is often termed, was much in vogue formerly. The practice was not, however, confined to brooks, but extended to rivers, sea-shores, moors, and ponds. It engaged, according to Blome, "the jer-falcon, the haggard falcon, the jerkin, and the tassell gentle." Waterfowl of every description were made prey of, but some particular objects, according with the training of the falcons, were particularly sought for. Dogs were employed to rouse the fowl, being led on by men who traversed the water's edge; while horsemen, with the hawks on their fists, were at hand to *cast off* one or more, according to the nature of the game. A heron or mallard would require two, while a widgeon or a teal would probably engage only one.

2368. *Blome's description of brook hawking* commences with the following hints on the training of falcons to this sport:—"In many places there are ponds inclosed with woods, bushes, and the like obscurities, so that they are concealed from passengers, and such places ducks do much resort unto: now, for the training up your *hawk* to take them, observe these directions: Your hawk being in all points ready to fly, be provided with two or three live *train ducks*, and let there be a man who must lie concealed in some bush by the pond with them, so that, coming to the place, having your hawk prepared for the sudden flight, beat the bush with your pole, where the man lieth concealed with the ducks, who must cast forth one of them, to the end the hawk may think it was put up by you; and if with a courage she takes it, *reward* her well; and this is the way to train up a goshawk to catch a *fowl at sowce*. Having trained your hawk to this, you may boldly go with her to the ponds where the fowl lies, and creeping close to the place, raise them up by beating about with your pole, and when any rise, let go your hawk from your fist, and if she seize it, let her take pleasure thereon, and reward her well. It is very necessary to have a spaniel with you; for if the hawk is well acquainted with the sport, she will be so nimble at the catch, that they will fall into the water together, and by that means the fowl may go to plunge, so

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that then the spaniel will be ready to do good service, and not displease the hawk. It is when your hawk will fly, jump, and come in at your lure, it is then that she is fit to go to the river in earnest; and to further manage your flight, observe these directions: When you have found where the fowl lies, then go about a quarter of a mile up in the wind to the river side, and whistle off your hawks, loosing their hoods, and let them fly with their heads in the wind, for there must be a cast of hawks for this flight; then let the falconers, or others that are at the sport, strike their poles in the water to cause the hawks to come in

unto you, and own the river; and when they are got up into their places, then let one of the falconers go below the fowl, that is, down the river; and the other that is above, let him come down, and show the fowl again, and by that means the fowl will be crost over land, that the hawks may make a fair stooping, and knocking the fowl on the land, will occasion the killing it, which will quarry your hawks. But if they should miss their stooping, so as the fowl may get to the river again, then your hawks must go to their wings to make good their flight; but if the fowl should go to plunge, then take down your hawks, lest you should fly them too long, and the falconers, with their spears or poles, may endeavour to spear or kill the fowl, which take to quarry the hawks with. If they kill not the fowl at first stooping, give them respite to recover their place; and when they are at their place again, and their heads in, lay out the fowl as before directed, and reward them well if they kill. You should do well to have a live duck in your hawking-bag, that if they kill not the fowl which is stooped (as oftentimes it happens), then your hawks being at their pitch and their heads in, you may throw to your hawks and reward them; and by this means you shall always keep your hawks in good life and blood, and to be inwards."

PART VII.

SHOOTING, AS A FIELD SPORT.

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SHOOTING PARTY GOING OUT.

2369. *By shooting we would imply that pursuit of game with dog and gun*, which heretofore was common amongst us, and then constituted the healthful and rational recreation of thousands, at once keeping down the superabundance of winged game, and furnishing our tables with a variety of food, not more admired for flavour, than remarked for its wholesome and digestible properties. Such was shooting, until the mania for strong excitement and rapid locomotion infected this pastime in common with most others. Since then, it is not by what way the gunner can pursue his game to please himself, but how he can do it with *éclat*, so as to create wonder and astonishment in others at the *pace he can go*, that the pleasure of this sport is estimated. See the youthful heir to manorial rights, instead of quietly going out as in days of yore, accompanied by one or two friends, followed by his keeper and a marker or two, in these times attended by a party of choice spirits, like himself, sallying out with relays of horses, as though the poor birds, if found refractory, were to be ridden down. It is a chance also if a caravan be not in attendance, crammed with all the materials of slaughter, as fresh dogs to replace those which tire, or are wounded by the reckless blades; fresh guns to supply such as are not enabled to keep their *pace* by reason of fouling; with vast supplies of stimulating fluids and solids to keep up the spirits of the principals, and stupify the subordinates by their quality and quantity. We are not now depicting a grouse party, where the distance to travel, and other calls on the energies of those concerned might require all this; but we are describing a scene that may be too often witnessed on the 1st of September against the partridge, that *sporting tramp* of English counties. Our party returns, slaughter has done its work, probably forty or fifty brace are sacrificed to gild the laurels of our hero and his friends, and all to mark the *pace they go*, in conformity with the fashionable speed of modern days and modern youths. A week thus spent clears the manor, and were it not partially restocked from neighbouring lands more fairly shot over by those who really enjoy the sport, not in a

frantic but in a rational manner, another such battue could not be perpetrated by the owner for years. Be it however understood, we do not seek to waste our daily energies, or trim our midnight lamp, to collate for the *dead slow*. No; we write for those who, like ourselves, are zealous in the legitimate pursuit of game, but eschew the unfair and wanton destruction of it; to such we respectfully offer what follows on the subject!

2370. *It is only since the discovery of gunpowder*, and the subsequent invention of the fowling-piece, that we are able to wage any thing like an equal warfare with winged game. It is true that, for a considerable time after the invention of fire-arms, many contended that the bow was fully equal to the arrest of the speediest animal, and that as it discharged its fatal messenger without noise, it neither gave timely notice to its victim, nor cautioned others of the presence of danger; and that it was therefore to be preferred to the lightning of the fire, or the thunder of the explosion which accompanied the discharge of the gun. Nevertheless, we must not confine either our views, or our inquiries, within limits too narrow for the importance of our subject; for had the pursuit of beasts and birds alone engaged the attention of man even in early times, it may be doubted whether the destructive arts now known would not have remained buried in oblivion. On the contrary, it was the hostility of human foes, without doubt, that stimulated his energies to discover more effective means of offence than those then known in the chase after beasts and birds.

CHAP. I.

EXPLOSIVE SUBSTANCES.

2371. *The various phenomena connected with fire* must have proved extremely interesting and wonderful to man in his pristine state. It must particularly have excited his surprise to find, that the friction of two cold substances together, as two pieces of wood, should produce heat; or, that the collision of flint and iron should elicit fire. But how much more must the early races have been astonished at the instances of spontaneous combustion which must occasionally have fallen under their notice, from the readiness with which many of the common products of nature ignite, either spontaneously, or when they come in contact with other matters. It was, without doubt, such phenomena that first created superstition in the mind of man; and it was probably the plot of the crafty in early times, to employ these as agents in working on the credulity of the simple to their own advantage. How different a use do we now make of them, when, instead of for ever shutting up the incalculable riches and abundant advantages of a coal mine, because of the sudden and tremendous explosions that occur when its inflammable air comes into contact with flame, by which so many lives have been lost (in one instance only, one hundred and one persons met instant death in one of the coal mines at Newcastle); instead, we repeat, of being deterred by superstitious fears from prosecuting their search for an endless supply of fuel, the active minds of the present day employ themselves in devising means, not of flying from the danger, but for conquering it; and it was reserved for the genius and research of a Davy in a great measure to effect this, by the discovery of the *safety-lamp*. Man therefore, as he progressed, became more and more experienced in the various phenomena which presented themselves around him; and his growing intelligence assisted him to make them subservient to his purposes. Thus, however explosive combustibles might at first have excited wonder and fear for a time, they eventually were turned to account, either in guarding his own habitation, or in annoying his enemies in theirs. The great inflammability of naphtha as soon as it reaches the air, the rapid and powerful combustion of sulphur, &c. &c. would be soon worked on with advantage to himself, both as an offensive and defensive agent; and when, from an accidental mixture of naphtha and sulphur with bitumen, it was found that an *unextinguishable fire* was created, then it was that the dogs of war were indeed unloosed.

SECT. I. *The Greek Fire.*

2372. *This terrible explosive* is called by Procopius, in his *History of the Goths*, "*Medea's oil*," as being supposed to be the invention of that sorceress. However, as its properties became known, and its uses widely extended, it received different names, according to its locality. In China it was known by the significant appellation of the "*oil of the cruel fire*," and in Greece as the "*Greek fire*," by which name it has been handed down to us. Jacques de Vitry notices a fountain in the east, after the following manner:—"*Ex cujus aquis ignis Græcus efficitur, quibusdam aliis admixtis*."—"From the waters of which, with some other ingredients, the Greek fire was formed." This was probably a spring of naphtha, by no means uncommon in Asia, and as such would be found not to yield, like ordinary fire, to the extinguishing effects of water. William of Newbury says, "*Muris enim admotæ (machinæ) incendebantur ab hostibus quodam ignis genere quam Græcum dicunt. Denique hoc genus arte confectum miræ esse potentie dicitur, nec contrario cedere elemento*."—"For the machines which were moved against the walls were burnt by the enemy with what was called the Greek fire. This kind of artificial combustible is said to possess an astonishing

power, and not to yield to its contrary element." So also Albert d'Aix remarks, "*Hujus ignis genus aquâ erat inextinguibile.*"—"This fire is not extinguishable by water." Invention was therefore busied in searching for means for this purpose, as well as to obtain an antidote to its effects; and what these were, we learn from Jacques de Vitry, who says, "*Postquam vehementer fuerit accensus, vix aut nunquam potest extingui, nisi aceto, aut hominum urina et sabulo.*"—"After the flame had acquired a degree of vehemence, it could scarce ever be extinguished, unless by a mixture of vinegar or human urine with sand." He further informs us that, to prevent its dreadful effects, ships were covered with cloths dipt in vinegar. Machines for attack were, for the same purpose, covered with boiled horse and bullock skins."

2373. *The machinery of fire-arms* was first generated in the attempts to make the destructive properties of this combustible more fatal and extensive. Joinville, who is said to have been an eye-witness, says, "that this fire was thrown from the bottom of a machine called a petrary, and that it came forward as large as a barrel of verjuice, with a tail of fire issuing from it as big as a great sword, making a noise in its passage like thunder, and seeming like a dragon flying through the air; and, from the great quantity of fire thrown out, giving such a light, that one might see in the camp as if it had been day." It is added, that this fire was ejected thrice in the night from the petrary, and four times from a large cross-bow.

SECT. II. *Of Gunpowders.*

2374. *Gunpowder may be said to be of two kinds*, essentially differing in composition, and equally so in their methods of ignition. One we have long known by the common name of *gunpowder*, with which we charge the barrel of the gun. The other, of modern invention, is called *percussion* or *detonating powder*, from a blow smartly given to it occasioning immediate ignition. With this we charge the lock of the gun; or, in other words, we more immediately connect the gun with the lock by its means. As both are momentous articles in a sporting point of view, and as we know that scientific research is pursued by many of our most ardent sportsmen, we hope to be excused if we treat of them somewhat in detail.

SUBJECT. 1. *Of Gunpowder popularly so called.*

2375. *The discovery of gunpowder* opened a new and wide field for the artisans who worked in projectiles. It is however singular, that the exact date of so important a change in the mechanics of war should not have been accurately noted. Some authorities lead to the conclusion, that gunpowder had been known and used in China and Hindostan long before the fourteenth century, which is by many others held to be the true date of its discovery. Grose however appears to favour the greater antiquity of the invention, and quotes the following ancient testimony to this point in *Grey's Gunnery*, printed A. D. 1731:—"In the life of Apollonius Tyaneus, written by Philostratus, about 1500 years ago, there is the following passage concerning a people of India, called Oxydracæ,—"These truly wise men dwelt between the rivers Hyphasis and Ganges; their country Alexander the Great never entered, deterred, not by fear of the inhabitants, but, as I suppose, by religious considerations; for, had he passed the Hyphasis, he might doubtless have made himself master of the country all round them; but their cities he could never have taken, though he had led a thousand as brave as Achilles, or three thousand such as Ajax, to the assault; for they come not out into the field to fight those who attack them, but these holy men, beloved by the Gods, overthrow their enemies with tempests and thunderbolts shot from their walls. It is said that the Egyptian Hercules and Bacchus, when they overran India, invaded this people also; and having prepared warlike engines, attempted to conquer them: they made no show of resistance, but upon the enemies' near approach to their cities, they were repulsed with storms of lightning and thunderbolts, hurled upon them from above." Mr. Grose also quotes, in proof of the same opinion, the testimony of Robert Norton, who, in a book entitled *The Gunner*, printed in London 1664, states, that Uffano reporteth "that the invention and use, as well of ordnance as of gunpowder, was in the eighty-fifth yeare of our Lord made known and practised in the great and ingenious kingdom of China; and that in the maretime provinces thereof, there yet remain certaine peaces of ordnance, both of iron and brasse, with the memory of their yeares of founding engraved upon them, and the armes of King Vitney, who, he saith, was the inventor." In the works of Friar Bacon, which are known to have been written at Oxford about the year 1270, which was at least half a century before the date attributed to the discovery by Schwartz, the ingredients which enter into the composition of gunpowder are expressly named. It is also there stated, that the effects of this powder when inflamed, are productive of a noise like thunder and a vivid flash like lightning. It is supposed that the Friar gained this information from the writings of Marcus Græuus, a still more ancient authority. Bishop Watson also favours the opinion, that the knowledge of gunpowder is of very ancient date.

2376. *The more modern discovery of gunpowder* has, nevertheless, many powerful advocates, most of whom consider that the merit of it should be given to Barthold Schwartz, a German monk. Father Kircher expressly states this to be the fact; and he strengthens his assertion

by citing the great reputation which Schwartz had gained by his profound knowledge in alchemy. If such was the case, without detracting from the general merits of Schwartz, he appears to have been somewhat indebted to chance for the discovery. For it is reported, that, having mixed together nitre, sulphur, and charcoal, for some medical purpose, a spark accidentally falling on the mixture exploded it. Frightened as he was, he profited by the discovery; and the first use he made of it, it is said, was also to frighten some bandits from their haunts in a neighbouring wood. Our limits prevent us from pursuing the controversy of the origin of gunpowder further; but should the reader feel an interest in the subject beyond what this supplies, we would refer him to the works of Bacon, Polydore Virgil, Baptista Porta, and Spodanus, among the olden authorities; and to Bishop Watson, together with the encyclopædias of note, among the modern authorities.

2377. *Gunpowder*, it is well known, is made by mixing together saltpetre, sulphur, and charcoal; but the relative proportions of these ingredients used in the process, both by the early and later makers of this article, vary considerably. Bishop Watson informs us that Baptista Porta, whose opinion seems to have had great weight with the public in the time in which he lived, which was the early part of the sixteenth century, gives different proportions of nitre, sulphur, and charcoal, according to the several degrees of strength required in the powder. It is, however, greatly to be regretted, that the aptitude in the nitre, which enters into its composition, to absorb moisture, is such as to render it difficult to make it retain its original strength without extreme care. This tendency in gunpowder to absorb moisture, is also greatly increased when the nitre is adulterated with common salt, as is too frequently the case. In proof of the injurious effect which moisture has on gunpowder, the following experiment made before the Royal Society is offered: — “A quantity of gunpowder was taken out of a barrel, and dried with a heat equal to that in which water boils; a piece of ordnance was charged with a certain weight of this dried powder, and the distance to which it threw a ball was marked. The same piece was charged with an equal weight of the same kind of powder, taken out of the same barrel, but not dried, and it threw an equal ball only to one-half the distance. This effect of moisture is so sensible, that some officers have affirmed that they have seen masses of gunpowder which were good in the morning, but which became (as supposed, by attracting the humidity of the air) good for nothing in the evening.” (*Gallery of Nature and Art*, p. 180.) We hope after this, that we need not enforce the necessity there is for every sportsman to dry his gunpowder on all occasions when it has been exposed to the air, and most so when the atmosphere is known to be superabundantly charged with moisture.

2378. *The chemical composition of gunpowder*, and the mechanical operations entered into in the making of it, are thus ably set out by Dr. Ure in his *Chemical Dictionary*: — “This explosive substance consists of an intimate mixture, in determinate proportions, of saltpetre, charcoal, and sulphur; and is better in proportion (every thing else being equal) to the quality of these ingredients. The nitre in particular ought to be perfectly refined by successive crystallisations, and finally freed from adhering water, by proper drying, or by fusion in iron pots at a regulated heat. Nothing can surpass in these respects the nitre prepared in the government powder-works at Waltham Abbey. It is tested by adding to its solution in distilled water nitrate of silver, with which it occasions no perceptible opalescence. The sulphur ought also to be of the finest quality, and purified by skimming, or even sublimation, if at all necessary. The charcoal should be newly made, it should burn without having any sensible residuum, be dry, sonorous, light, and easily pulverised. The charcoal for gunpowder is made either of alder, willow, or dogwood, the latter being preferred, which is cut into lengths, and ignited in iron cylinders, the wood before charring being carefully stripped of its bark. The three ingredients being thus prepared, are ready for manufacturing into gunpowder. They are, 1st, separately ground to a fine powder, which is passed through proper sieves or bolting machines. 2dly, They are mixed together in certain proper proportions, but which do not seem to be definitely determined, for they differ in different establishments of great respectability, as is shown in the following table: —

	Nitre.	Charcoal.	Sulphur.
Royal Mills at Waltham Abbey - -	75	15	10
French for war - - - -	75	12·5	12·5
Ditto for sportsmen - - - -	78	12	10
Ditto for mining - - - -	65	15	20
Chaptal's proportions - - - -	77	14	9
Chinese ditto - - - -	75·7	14·4	9·9
Mr. Napier's - - - -	80	15	5

3dly, The composition is then sent to the gunpowder-mill, which consists of two edgestones of a calcareous nature, turning by means of a shaft on a bedstone of the same nature, which gives no sparks, as sandstones would be apt to do. On this bedstone the composition is spread, and moistened with as small a quantity of water as will, in conjunction with the

weight of the revolving stones bring it into a proper body of *cake*, but not of *paste*. The line of contact of the edgestone is constantly preceded by a scraper, which goes round with the wheel, continually scraping up the cake, and turning it into the track of the stone. From fifty to sixty pounds are usually worked at once in each mill-wheel. When the cake has been thoroughly incorporated, it is sent to the corning-house, where a separate mill is employed to form the cake into grains of corn. 4th, Here it is first pressed into a hard firm mass, then broken into small lumps, after which this grainning is executed by placing these lumps in sieves, on each of which is laid a disc of *lignum vite*. The sieves are made of parchment skins perforated with numerous round holes. Several such sieves are fixed in a frame, which, by proper machinery, has such a motion given to it, as to make the *lignum vite* runner in each sieve move round with considerable velocity, so as to break the lumps of the cake, and force the substance through the sieves, forming grains of several sizes. The granular particles are afterwards separated from the finer dust by proper sieves and reels. 5th, The corned powder is next hardened, and the rougher edges taken off by being revolved in a close reel or cask, turning rapidly on its axis. This vessel somewhat resembles a barrel churn; it should be only half full at each operation, and has frequently square bars inside, parallel to its axis, to aid the polish by the attrition. 6th, The gunpowder is now dried, which is done generally by a steam heat, or by transmitting a body of air, slightly heated in another chamber over canvass shelves, covered with the damp gunpowder." (*Dr. Ure's Chemical Dictionary*, art. GUNPOWDER, p. 514.) For some interesting additional matter on the rationale of the action of gunpowder in detonation and combustion, we would refer to the work itself.

2379. *The introduction of other substances* to increase either the strength or the quantity of gunpowder cannot be wondered at, when we consider the importance of the article. It has been often varied, not only in the relative portions of its principal ingredients, but also by an experimental admixture of other articles with it, with a view to increase its strength, to lessen its cost, or simplify its manufacture. Mr. Winsor some years ago took out a patent for introducing sugar as an ingredient in the manufacture. He says that, "When properly reduced to a powder by trituration, it may be mixed with common gunpowder, in the proportion of one-fourth sugar to three-fourths powder, without diminishing its exploding force." Query, Does this substitute *augment* it?

2380. *The size of the grains of gunpowder, should they be small or large?* Many contend that gunpowder should be minute in its grains; other authorities, of equal weight, assert that the coarse grained powder is the strongest. We believe the truth to be, that each possesses advantages over the other, according to the size and weight of the fire-arms the powder is used for. Greener, however, says, "I have no hesitation in asserting, that if you obtain powder of fine grain, and powder composed of the same quality of ingredient, coarser grained, the latter will be found to be stronger than the former. This I have tried in various ways, both by the rifle and the musket, and the same quantity of the coarser invariably gives the longer range. It is owing, in my opinion, to each grain containing within itself greater force. When one is ignited, its effect is greater than that of several smaller ones. Four times the quantity of smaller grained has to be ignited to generate the same force, as is required of the larger grained. Again, the smaller grain is generally coated with a sort of varnish, which must be injurious to its quickness. Another advantage the larger grain possesses is, that, from its size, it is less liable to be completely compressed into a solid state; and, from the largeness of the interstices around them, more atmospheric air is contained in a body, which must greatly benefit it in igniting, as without question (though it is possible to fire powder *in vacuo*), it will burn better with the assistance of atmospheric air." (*Loc. cit.* p. 170.) This universal approval, however, is doubted by other authorities; and we are ourselves of opinion, that were large grained powder only used, our medium guns would misfire much oftener than they now do. It is, we conceive, advisable, that the grains of the powder employed should be proportionate to the bore of the gun and the weight of its metal. We have ourselves made a few experiments, to assure ourselves of the truth in this respect; and our opinion, formed on the result of these, corresponds with those of Colonel Hawker, who says, "The best powder for copper-cap guns is the 'fine cylinder' of Curtis and Harvey, the large-grained powder being liable to misfire. But with copper primers we may venture on that of larger grain; and particularly in damp weather, or on salt water. But by experiments in 1829, I find that the size in grain of the powder should be as duly proportioned to that of the gun, and the long distances for which it is required, as the wadding must be to the size of the caliber." He further remarks, "I have invariably observed that small grained powder fails to answer in large guns; particularly on salt water, and in damp weather. It always shoots weak, beyond fifty or sixty yards, and is very liable to hang fire. If a punt-gun is loaded with fine powder, and brought in at night, the chances are that it would hang fire in the morning. But, with coarse cannon-powder, I have known a gun that has been loaded a fortnight go off as well as possible, by merely being probed and fresh primed." (*Instructions to Young Sportsmen*, 7th ed. p. 100.) There is here both argument and fact.

2381. *The glazing of gunpowder, is it beneficial, or the reverse?* As far as our own experience goes, there is little difference between the glazed and the unglazed. We, however, rather prefer the glazed, but we are by no means certain that we do it on any better ground than that it is the most sightly. Colonel Hawker appears to prefer the unglazed, but he gives us no reason for this preference. If he does so from a supposition that the glazing coat is a species of varnish, then we fully concur with him that it would be better unglazed, as it may be supposed the coat given to each grain must somewhat delay its ignition; but if this glazing be nothing more than black lead, in which the powder is rolled like glazing of shot, then it cannot hurt it.

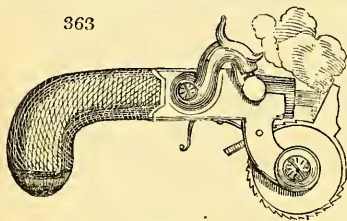
2382. *On the force with which gunpowder acts on resisting bodies,* Mr. Babbage offers the following thoughts in his *Economy of Machinery*; and as it bears very much on our subject, we shall give it in his own words: — “If a gun be loaded with ball, it will not kick so much as when loaded with small shot; and amongst different kinds of shot, that which is the smallest causes the greatest recoil against the shoulder. A gun loaded with a quantity of sand, equal in weight to a charge of snipe-shot, kicks still more. If, in loading, a space is left between the wadding and the charge, the gun either recoils violently, or bursts. If the muzzle of a gun has accidentally been stuck into the ground, so as to be stopped up with clay, or even with snow, or if it be fired with its muzzle plunged into water, the almost certain result is that it bursts. The ultimate cause of these apparently inconsistent effects is, that every force requires *time* to produce its effect; and if the *time* requisite for the elastic vapour within to force out the sides of the barrel, is less than that in which the condensation of the air near the wadding is conveyed in sufficient force to drive the impediment from the muzzle, then the barrel must burst. It sometimes happens that these two forces are so nearly balanced that the barrel only swells, the obstacle giving way before the gun is actually burst. The correctness of this explanation will appear, by tracing step by step the circumstances which arise on discharging a gun loaded with powder confined by a cylindrical piece of wadding, and having its muzzle filled with clay, or some other substance, offering a moderate degree of resistance. In this case the first effect of the explosion is to produce an enormous pressure on every thing confining it, and to advance the wadding through a very small space. Here let us consider it as at rest for a moment, and examine its condition. The portion of air in immediate contact with the wadding is condensed; and if the wadding were to remain at rest, the air throughout the tube would soon acquire a uniform density. . But this would require a small interval of time; for the condensation next the wadding would travel with the velocity of sound to the other end, from whence, being reflected back, a series of waves would be generated, which, aided by the friction of the tube, would ultimately destroy the motion. But until the first wave reaches the impediment at the muzzle, the air can exert no pressure against it. Now, if the velocity communicated to the wadding is very much greater than that of sound, the condensation of the air immediately in advance of it may be very great before the resistance transmitted to the muzzle is at all considerable; in which case the mutual repulsion of the particles of air so compressed, will offer an absolute barrier to the advance of the wadding. If this explanation be correct, the additional recoil, when a gun is loaded with small shot or sand, may arise in some measure from the condensation of the air contained between their particles; but chiefly from the velocity communicated by the explosion to those particles of the substances in immediate contact with the powder being greater than that with which a wave can be transmitted through them. It likewise affords a reason for the success of a method of blasting rocks by filling the upper part of the hole above the powder with sand, instead of clay rammed hard. That the destruction of the gun-barrel does not arise from the property possessed by fluids, and in some measure also by sand and small shot, of pressing equally in all directions, and thus exerting a force against a large portion of the interior surface, seems to be proved by a circumstance mentioned by Le Vaillant and other travellers, that, for the purpose of taking birds without injuring their plumage, they filled the barrel of their fowling-pieces with water, instead of loading them with a charge of shot. The same reasoning explains a curious phenomenon which occurs in firing a still more powerfully explosive substance. If we put a small quantity of fulminating silver upon the face of an anvil, and strike it slightly with a hammer, it explodes; but instead of breaking either the hammer or the anvil, it is found that that part of the face of each in contact with the fulminating silver is damaged. In this case the velocity communicated by the elastic matter disengaged may be greater than the velocity of a wave traversing steel; so that the particles at the surface are driven by the explosion so near to those next adjacent, that when the compelling force is removed, the repulsion of the particles within the mass drives back those nearer to the surface with such force, that they pass beyond the limits of attraction, and are separated in the shape of powder. The success of the experiment of firing a tallow candle through a deal board would be explained in the same manner, by supposing the velocity of a wave propagated through deal to be greater than that of a wave passing through tallow.”

2383. *Experiments to determine the strength of gunpowder* are frequently resorted to, and such experiments have been much varied. The chemical analysis for the purpose of ascertaining the relative quantity and quality of saltpetre as an essential component, as conducted by Bishop Watson, leads to the conclusion that it is the great disposition in nitre to absorb moisture from the air that is so injurious to all gunpowder, when not wholly excluded from atmospheric influence. The more pure, however, the nitre, that is, the less it is mixed with common salt, as is too frequently the case, the less will be its tendency to become damp. Good gunpowder, as we know, is instantly ignited, and its expansive force is in proportion to the instantaneous communication of the fire throughout the mass. The ignition of good powder when sufficiently rapid may tinge the pan with a golden hue, but it will leave little or no dross; and thus, when gunpowder is not originally good, or has been acted on by the air, then the pan of the lock is furred with feculæ, and such appearance should be marked by the wary sportsman, and it will serve him as an *epreuvette*.

2384. *The government proof of gunpowder*, as made by the Board of Ordnance, is said to be as follows:—"The triers first take out of the several barrels of gunpowder a measure full, of about the size of a thimble, which is spread upon a sheet of fine writing paper, and then fired: if the inflammation be very rapid, the smoke rises perpendicular; and if the paper be neither burnt nor spotted, it is then judged to be good powder. Then two drachms of the same powder are exactly weighed, and put into an *epreuvette*; which, if it raises a weight of twenty-four pounds to the height of three inches and a half, is received into the king's magazine as proof." Count Rumford's plan for the purpose, as detailed in the *Philosophical Transactions*, vol. lxxi. may also be referred to by the inquisitive reader; but he should still take this caution with him in his researches on this subject, that accidental circumstances are likely to vary the testing of it, however uniformly the experiments may be conducted, particularly that of the present state of the atmosphere.

2385. *The common instrument called the epreuvette, or trier* (fig. 363.), seen in every gunsmith's shop, is unquestionably of some service in ascertaining the strength of moderate

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POWDER TRIER.

quantities of gunpowder; but it cannot be depended upon when much nicety is required, or any large weight is to be tried. There are but few *epreuvettes* which are made on such principles as will test the quality of powder satisfactorily. Colonel Hawker observes, "In the best the wheel on which the gradations are marked is large, and the spring strong; consequently, the resistance to the force of the powder is considerable. The stronger the trier is, the better; for without the resistance is strong, a correct proof cannot be obtained; because,

if not sufficiently strong to detain the powder in the chamber long enough for all the particles to ignite, many of them (especially in powder of good firm grain) will fly off unburnt, and, of course, a part only of the charge would be proved. The part attached to the wheel of the *epreuvette*, which shuts the mouth of the chamber, should be so nicely adjusted, that, on looking closely at the parts when in contact, no light can be seen between them; for, if any light is to be seen, there is of course so much vacancy, and consequently so much windage; and, in proportion to the windage, the proof will be lower, and therefore incorrect. Three fires at least should always be made in proving, and the average taken is the mean amount; for variations frequently happen in fires immediately following each other, although made with considerable attention. Care should be taken, after every fire, to clean the chamber thoroughly; or otherwise the foulness left by the preceding discharge would lessen the space by which the succeeding charge would become proportionably less." (*Ibid.* p. 100.)

2386. *The Oakleigh Shooting Code is smart, and very justly so*, on the retailers of gunpowder, and on those sportsmen also who furnish themselves from such questionable sources. Their powder may be good originally, but their care of it after it has come into their possession is another matter. "Thus, the Dartford gunpowder," says the *Code*, "bought from one retailer will fire smart and strong, while a similar article obtained from another will be comparatively weak, and slow of ignition. This difference in the quality of powder is occasioned by exposure to different atmospheres. Gunpowder is generally purchased by the shooter at a provincial town at some distance from the manufacturers. One shop or warehouse is dry; another is damp. One package of powder may have lain only twenty-four hours in the front boot of the London mail, in July, to the imminent danger of the cigar-whiffer on the coach-box; another may have been sweating three weeks in a canal-boat, in March: hence, the various degrees of liability to imbibe moisture before the powder comes into the retailer's possession, and while in his keeping. Damp not only affects the nitre, of which gunpowder is chiefly composed, and thereby occasions loss of

strength, but it also operates prejudicially on the ingredients which contribute to the instantaneous ignition." (*Ibid.* p. 72.)

2387. *Gunpowder should be bought in canisters only*, and as fresh as possible: when also it can be got direct from the makers, there is the greater chance of its being not injured by moisture. In the keeping of the sportsman, we again repeat, that it should be carefully excluded from the air. The common tin case, however closely papered, is not sufficient for the purpose, unless it be made waterproof, and closed either by a soft velvet cork, or a fine threaded screw; the former is preferable. Our own powder we divided and packed into distinct smaller bottles, each containing about four ounces; which being corked and sealed, prevented our exposing more than was wanting for each day's consumption. We knew a crack shot who, when the atmosphere was damp, would not trust his powder to his flask, but preferred a two-ounce phial, secured with a strong leathern coating, and corked. He said that he experienced by this plan such a superiority in the strength of his powder, on particular occasions, as in damp weather, to amply repay him for his trouble.

2388. *The more eminent manufacturers of gunpowder* are well known, and it is hardly necessary for us to observe, that the sportsman should be careful to buy none but that which is made by such. We have ourselves shot with the powder of each; and we, as well as others, have had our partialities; but, like others, when things went wrong, we more often found that the fault was rather in ourselves, than in either the gun, gunpowder, or shot. The powder manufactured by Pigou and Andrews is excellent, and is preferred by many to all others. Messrs. Lawrence and Son also still maintain the high reputation of the Battle powder, as Messrs. Curtis and Harvey shine in the well known cylinder powder; nor must we omit to notice, that at a late series of experiments at the Hounslow Mills, the results fully confirmed Colonel Hawker's favourable opinion of this powder. He also lauds Mr. Burton's powder, sold at 69. Old Broad-street.

SUBJECT. 2. *Percussion Gunpowders.*

2389. *The application of these powders in priming of guns* has nearly revolutionised the sportsman's system of gunnery. The nature and properties of detonating substances were comparatively but little known until of late years, when chemistry had more widely opened her stores to the zealots who pursued her. We will therefore commence the subject of fulminating, percussion, or detonating substances, as used for inflaming of gunpowder, by reminding the reader, that the first fulminating powder was composed of oxymuriate of potash, fine charcoal and sulphur in various proportions; but a common one was as follows, — To any given quantity of the first article, add one-eighth of the second, and one-sixteenth of the third.

2390. *The chlorates are thus remarked on by Dr. Turner*, as having been employed for the purpose of priming guns: — "The salts of chloric acid are very analogous to the nitrates;" and he continues, — "as the chlorates of the alkalies, alkaline earths, and most of the common metals, are composed of one equivalent of a protoxide, M X C C , it follows that the oxygen of the latter to that of the former is in the ratio of one to five. The chlorates are decomposed by a red heat, nearly all of them being converted into metallic chlorides, with evolution of pure oxygen gas. They deflagrate with inflammable substances with greater violence than nitrates, yielding oxygen with such facility that an explosion is produced by slight causes. Thus a mixture of sulphur with three times its weight of chlorate of potassa explodes when struck between two hard surfaces: with charcoal and the sulphurets of arsenic and antimony, this salt forms similar explosive mixtures: and with phosphorus it detonates violently by *percussion*. One of the mixtures employed in the percussion-locks for guns consists of sulphur and chlorate of potassa, with which a little charcoal or gunpowder is mixed; but as the use of these materials is found corrosive to the lock, fulminating mercury is now generally preferred." (*Turner's Elements of Chemistry*, 5th ed. p. 713.)

2391. *Fulminating mercury*, which forms the percussion powder at present in use, is principally indebted for its discovery to Mr. Howard, the particulars of which may be met with at large in the *Philosophical Transactions*, *Pantologia*, &c. &c. An excellent condensed account of the chemical properties and method of manufacturing this powder in Dr. Ure's *Chemical Dictionary* is as follows: — "A hundred grains of mercury are to be dissolved by heat in an ounce and a half by measure of nitric acid. This solution being poured cold into two ounces by measure of alcohol in a glass vessel, heat is to be applied till effervescence is excited. A white vapour undulates on the surface, and a powder is gradually precipitated, which is to be immediately collected on a filter, well washed, and cautiously dried with a very moderate heat. This powder detonates loudly by gentle heat, or slight friction. Should any attempt be made to make this powder in any considerable quantity, the process must be conducted accordingly." The fulminating mercury (we gather from the same authority) should be moistened with thirty per cent. of water, then triturated in a mortar, and hereafter mixed with the sixth part of its weight of gunpowder. Matches, caps, &c. thus

made resist damp, and do not corrode the instrument which contains the powder. They will even take fire after several hours' immersion in water, whereas the priming powder, made with chlorate of potash, sulphur, and charcoal, attracts moisture speedily, and corrodes every metal it comes in contact with, consequently is injurious to the gun it is used with. The Parisian percussion caps are all of them thus made, and are sold at the rate of six francs the thousand. The *Bulletin des Sciences Militaires* states, that the cap-match is made thus: — "Having triturated ten parts of fulminating mercury on a marble slab with water by means of a wooden muller, add six parts of gunpowder, and grind the two together." Of these military cap-matches, each, it is said, contains one grain and a quarter of fulminating mercury with six-tenths of that weight of cannon powder. Dr. Ure however remarks, that some of the best match-powders made in France are much lighter, and do not weigh altogether above two-thirds of a grain.

2392. *Fulminating products may also be gained from both gold and silver*, when under the influence of muriatic and nitric acids. These as detonating substances, however, being not equally manageable, and much more expensive than what are obtained from mercury, we shall pass over without further notice. The curious reader may however find them detailed in the works of the authors we have quoted. Having thus far discussed the history, properties, and method of manufacturing these gunpowders, we will now proceed to the examination of the gun itself.

CHAP. II.

FIRE-ARMS GENERALLY.

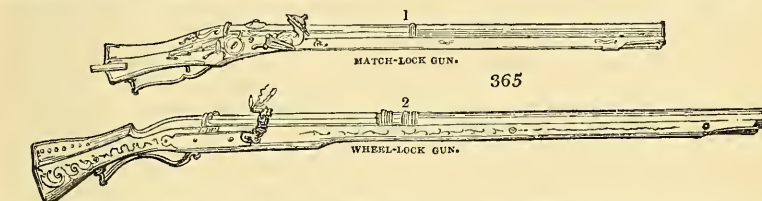
2393. *The antiquarian would carry the use of artillery back to the time of Moses*, and would impress on us the circumstance of the finding of old cannon in India by Alexander the Great, the date of which had however been long lost. Norton, as observed before, p. 720., quotes Uffanc to prove that the use of fire-arms both large and small, was common throughout the Chinese empire as early as the fifty-eighth year of our Lord; stating also that the remains of ordnance, both large and small, bearing the impress of King Vitney, may yet be met with. We will however not stop further to examine into the antiquity of fire-arms, but content ourselves with recording a simple fact, in corroboration of the immense importance of the discovery to man as a belligerent, at whatever period it took place. It is well ascertained that the effects of the mighty battering ram of the ancients, which weighed 42,000 lbs. and was worked by 1000 men, did no more execution in a bombardment than a point-blank shot with a ball of 36 lbs.

2394. *Cannon*, whatever may be their real antiquity, were however little known among us until the early part of the fourteenth century. One notice of them states that they were used, under the name of bombardars, by Edward III. against the Scots. At this time they appear to have been rudely shaped, and wide at the mouth like a mortar, but contracted behind; and it is further stated, that the shot used for them were of stone. Hand cannon were next seen of a size which admitted of their being carried between two men; but it would seem that all the artillery then in use must have been of foreign manufacture; for it is confidently stated that cannon were not cast in England until the reign of Henry VIII., when two aliens were employed for the purpose, "before which time such were imported from other countries." In the reign of this prince, and that of his successor Elizabeth, it seems that much care was taken to improve the artillery of the country; for not only were the best foreign workmen employed, but the parliaments of those days regulated the sizes of the pieces, and also the quality of the metal they were made of, which was, as we believe, a mixture of copper and tin. To hand cannon succeeded the *hand gonne*, which, although often confounded with hand cannon, yet being so light and portable as to be carried in the hand, and fired by one man only, was evidently an entirely different instrument. It is not to our present purpose, however, to trace the origin of the larger pieces of artillery, but to confine ourselves to the smaller varieties of fire-arms, which, though originally intended for human warfare, yet being at length diverted to sporting practices, are entitled to our particular attention. Ere we terminate this subject, we will notice the ingenious invention of Mr. Perkins, an American, who has proposed to employ the elastic force of water converted into steam for the purpose of propelling bullets; and the power of the apparatus must of necessity depend on the intensity of the heat which is employed. A small cannon was constructed, which, when connected with the generator or boiler, has been found to discharge ordinary musket bullets at the rate of 240 in the minute, and with such tremendous force, that, after passing through an inch deal, the ball, in striking against an iron target, became flattened on one side and squeezed out. The original size of the bullets was 0.65 of an inch; but, after striking the target, they were plane-convex, and their diameter 1.070 inches, and 0.29 of an inch thick.

2395. *The hand gun, or gonne*, as then written (*fig. 364.*), was of this kind, and is said to have been invented by Billius, a Milan nobleman. It is described as an iron tube (*a*), affixed to a club or rude stick (*b*). A hollowed part near the breech or base (*c*), receives the priming powder; but this hollow having no cover, leaves the weapon extremely inefficient; to obviate which defect, in the reign of Henry VI., a small priming pan was attached. As may however be supposed, it yet remained, even with this addition, by no means very effective either for attack or defence; to remedy which a small battle-axe (*d*), was added, which each soldier carried in a pouch at his side (*e*), and which being removed from thence and inserted within the muzzle of the hand gun, afforded him additional means, both offensive and defensive. When we consider how wonderfully the means of destructive warfare among contending armies are now increased, we look with surprise that the work of annihilation is not now so extensive as formerly. It must be thus accounted for, because the means of attack and defence are now more nearly equalised, which some appear to lament on philosophical principles, arguing that destructive warfare is actually a blessing, as it protracts the horrid period when man must eat man, or otherwise starve.

2396. *The stocked gun formed the next important improvement.* Here the barrel was seen much lengthened and embedded in a wooden stock, which was at first straight; but further consideration having suggested the advantages of better aim and lessened recoil by curving the line, a bent stock was employed. It being, however, quite evident that to inflame the powder with which the gun was loaded and primed, some ignitable matter should be applied to the touch-hole, which human ingenuity was to devise the means of readily inflaming, and which was soon supplied by the addition of a lock to the barrel.

2397. *The match-lock and wheel-lock guns* (*fig. 365.*) were next seen. The match-lock (1), was first used, by which a lighted match placed within its jaws was brought into contact



with the priming by means of a spring-trigger. The wheel-lock gun (2) formed the next step in the march of gunnery; that represented in our cut having been, as it is said, made in the reign of Elizabeth; and although we must allow that, by comparison, it was thus rendered both more convenient and effective in war, it nevertheless progressed little towards becoming a sporting article. This carbine was fired by means of friction, gained by a notched wheel passing rapidly over the edge of a flint. It was necessarily made massive to overcome the resistance offered by two such substances opposed to each other as flint and steel; consequently the wheel required to be wound up for action by what was called a spanner. We shall close our slight sketch of the manufacture of fire-arms, by dividing them into five steps: 1st, The ignition of the gunpowder by a match held in the hand; 2dly, By the aid of a match-lock; 3dly, By means of a wheel-lock; 4thly, By the flint-lock; 5thly, By the percussion-lock.

SECT. I. *The Gun, or Fowling-piece.*

2398. *The word gun is of doubtful etymology*, and the critical origin of the term seems as obscure as its types are numerous. The *Encyclopædia Britannica*, on the word GUN, observes, — "Some derive it from the French word *mangon*, which was a warlike instrument used before the invention of the gun now employed; and employed in discharging arrows and other missiles, before the invention of gunpowder. Others derive it from *gyn*, an engine employed for similar purposes. Selden says, "The word gun was in use in England for an engine to cast a thing from a man, long before there was any gunpowder found out." Fire-arms however, we know, were introduced into this country about the year 1471; and were used at the sieges carried on in Europe in 1521. In the time of Henry VIII. and his successor Elizabeth, as already observed, the size and shape of fire-arms were regulated by parliament; but the mode of firing them was still by a direct application of fire by hand, or by machinery; the firing of guns, therefore, by means of the flint-lock is a modern invention. The balls also at first were not

made up into cartridges along with the powder, but were carried in a separate purse or bag, and the powder by itself in a horn or flask. To insure certainty of firing, a finer kind of powder was used for priming than for the ordinary charge of the gun; and this priming powder was carried by itself, in what was called a touch-box. Most of the guns, when first used as warlike instruments, were so heavy, that they could not be held out and fired from the shoulder, as in modern times. The soldier, therefore, was provided with a rest, which he stuck into the ground, and upon which he laid his gun, and took a deliberate and steady aim. The rests were shod with iron, to preserve them from decay, and that they might the more easily penetrate the ground; and were of different lengths, according to the height of the man using them. The addition of the bayonet to the gun was not made earlier than 1671, being first used by the French about that time. It derives its name of bayonet from Bayonne, a town in the south of France, where that instrument was first made. Few practical arts have made more rapid advancement than that of gun-making. The competition amongst the gun-makers has been very great, and they have arrived at a degree of perfection which it would seem to be impossible to surpass. Almost every great town in England, Scotland, and Ireland, as well as on the Continent, has large establishments for carrying on this beautiful and ingenious branch of manufacture. Judging of the perfection of the art by the expense of the article, we might be led to conclude that gun-making had reached the *acmé* of perfection. It has been no uncommon thing to pay 50, 60, or even 70 guineas for a best London-made gun. The Continent has even gone before us in this respect, for we are told that, when Napoleon was in the plenitude of his grandeur, he established a gun manufactory at Versailles; and we are informed that pistols were there made at 10,000 livres, or 400*l.* sterling each, and guns at 50,000 livres, 2000*l.* sterling. Of these the first consul often made presents to foreign princes, to general officers, and other favourites. The Marquis of Rockingham, it is also said, gave to Colonel Thornton a fowling-piece which cost 400*l.*; and that Messrs. Robert and John Wheeler, gun-makers, of Birmingham, presented George IV. with a gun of the most exquisite workmanship, which cost 300 guineas.

2399. "*The principles of gunnery*," Mr. Greener remarks, "are but little known among the generality of sportsmen." "I do not deny," he continues, "their dexterity in shooting, the precision with which they take their aim, kill their bird, or hit their object, but they have little knowledge of the principle on which the gun is or ought to be constructed. The causes of accidents they are especially unacquainted with. Those causes are serious enough, God knows! but there is nothing that would so much tend to diminish their number, and, of consequence, to render accidents less frequent, than a knowledge of all those principles, in reference to which the gun is constructed." (P. 11.) These observations are extremely just, and worthy the attention and remembrance of every one carrying a gun; and if we are found to dilate somewhat on the subject, the reader may be assured we do not do it to swell our pages; on the contrary, we heartily wish we could circumscribe them with justice to the subject. But we repeat, we are forced into so much detail, as will enable him to judge between the good and the bad, the safe and the unsafe. The importance of this must be evident, when it is considered that a bad gun not only mars the sportsman's hopes, but also endangers both life and limb. Neither is it prudent in any person even to trust himself in the company of a shooter who has, without a sufficient trial, furnished himself with a gun from some one of the cheap or equivocal sources from whence guns are sometimes obtained, such as hardware shops, pawnbrokers, &c. When, however, a gun has been thus bought, by all means let it be *proved* at a proof-house before using, if the purchaser has any regard for his safety. Were the substitution of charcoal iron for the real stub-twist iron, the head and front of the offending of the makers and vendors of these guns, it would be well; but many of those sold at these markets, and by inferior gun-makers also, are forged, we believe, from skelp iron; and if Mr. Greener, himself a scientific and eminent gun-maker, is correct, which we have no reason to doubt, some of these, and particularly those met with in hardware shops, are even forged from Wednesbury skelp, a still lower grade of metal. If such be the case, what can be expected but bursting barrels, snapping locks, and broken stocks? Indeed, these assertions of Mr. Greener need no further proof than the fact, that showy guns can be bought in Birmingham, at "first hand," at the rate of 4 guineas the double, and 5*s.* the single barrel. What risks are, therefore, every day run by the unwary, who, deceived by showy appearances, and tempted by what seems a low price, compared with what some give, make purchase of such articles. Nor do we hardly know a more mortifying situation to the unfortunate purchaser of such an article, than that which he experiences when *showing it up at a meet* with some one or two well informed sportsmen, "up to the mark" in all that relates to field gunnery: instead of being complimented on his new bought purchase, he is apprised that he is "taken in;" and, furthermore, is requested, for safety to them while beating for game, to let there be at least one hedge between him and them. We, however, would console him, by showing how to avoid both danger and disgrace, which is by having, as before stated, his new purchase proved at a proof-house, he being himself present; when, if the result is fortunate, and his gun, moreover, performs well in the field, the laugh will then be on his own side.

SUBJECT. 1. *The Gun-barrel.*

2400. *Iron*, as is well known, is the principal component part in the manufacture of fire-arms; but of the thousands who would reply, "Well, does not every one know this?" how few, how very few, have any correct notion of the nature of iron; as to how it is formed, whence it proceeds, whether it be a simple substance, or a compound, &c. &c. When the vast masses of iron which enter into the structure of the iron bridges across the Thames, or support the pressure of the earth in our railways and aqueducts, astonish the spectator, they do nothing more, and the unreflecting mind little suspects that, as a native product, it is extremely rare. It is very seldom collected from below (*i. e.* in a native state), but is occasionally dropped from above; and meteoric iron has for ages been a stumbling-block to the uninformed. Nor is it altogether uninteresting to learn, that meteoric iron is always combined with nickel and cobalt. But to the point we have in view, of directing the attention to this vast agent in all the mechanics of life in which it forms so prominent a part; besides the larger masses we have adverted to, can we look around the humblest dwelling, or the princely palace, without meeting it at every glance? the polished stove, the steel-burnished fender and fire-irons, exhibited in the large, while every article of furniture is clamped, nailed, or bradded with it in the small; and so insidious is it, that it amalgamates with every thing; it forms a part of our ironstone china,—nay, more, it forms an integral portion of ourselves, and is said to roll about in our arteries and veins in little annular masses. So universal is its presence, that it pervades nearly all dead matter, and certainly all living matter, whether animal or vegetable; and yet, with the exception of meteoric iron, it is very rarely met with in a native or uncombined state.

2401. *Iron is procured from certain mineral substances*, which, as they hold it in combination in considerable quantities, are thence called *ores of iron*. These ores being first torrifried and reduced to powder, are submitted to the action of coke or charcoal, and lime, at a high temperature. The carbon deprives the ore of its oxygen, and the lime, by fluxing the mass, forms all the impurities into a fusible refuse called slag. From this mass, the iron becoming separated, descends by its weight to the bottom, passes off by appropriate apertures, and is then the cast iron of commerce, from which state it is rendered malleable by a fresh exposure to heat, while a strong current of air is at the same time made to pass over its surface, after which it is exposed to very powerful pressure by rolling and hammering; and this, by approximating its particles, makes it tenacious in the extreme. Cast iron, as every one knows, is brittle; wrought iron, on the contrary, is adhesive, is easily bent, but breaks with difficulty; consequently is admirably adapted to gun-barrel making. And now, brother sportsmen, if you please, we will pursue it until we have forged a safe and effective *fowling-piece*!

2402. *Gun-barrels*, to be equally safe and effective, should be forged from the best Swedish iron, in its highest state of ductility and tenacity. It was these qualities in the metal of which the Spanish barrels were formed, that rendered them so prizable,—twenty, thirty, and even forty pounds having been given for a single barrel of this kind.

2403. *Spanish barrels*, it is well known, were manufactured from what are by iron forgers technically called scraps, but by the public are known as the stubs or stumps of the nails, which have been used in fastening on the shoes of the mules, asses, and horses of the country. Neither were its valuable properties wholly owing to the natural ductility of the iron from whence the shoe-nails were formed; it was also greatly indebted to its after treatment when in mass, which was so singularly laborious, if we can rely on what is related, that a melted mass of stubs has, by violent hammering, been reduced from forty or even fifty pounds to a quantity only sufficient to make a single barrel. Of the goodness of the Spanish barrels there is no doubt, but the general getting up of the gun was far behind our own; principally because one manufacturer supplied barrel, lock, stock, &c. Great however as was the labour bestowed on the Spanish gun-barrels, if we believe the accounts we receive, it was little when compared with that expended on the Damascus sword-blades. On these it is said that weeks, nay, even months, were spent in active hammerings of the metal, of which they were to be formed. Thus likewise to give a *temper* to minor articles, the blacksmith, with lusty arms and weighty hammer, plies the red-hot bar over and over ere he fashions it into a horse-shoe. The Spanish gun-barrel is likewise said to have owed some of its superiority to the following method used in its formation. Instead of framing the iron plate, so that it should overlap slightly at the point of juncture, the Spanish workmen added another complete turn or lap, so as to make the barrel, as it were, double throughout.

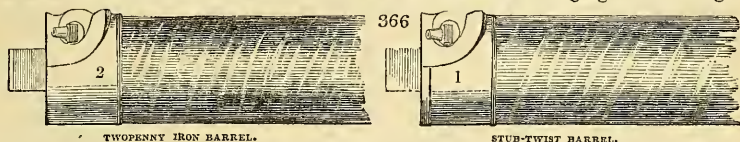
2404. *The Damascus barrel*, as well as the other articles of that famed manufactory of former days, and those of the present, are however very much altered in quality. The gun-barrels, scimitars, and sword-blades we used to receive from this noted repository, were wholly made of highly tempered iron and steel with extraordinary labour. The Asiatic sword-blades were even more highly tempered than any other of the Damascene wares; those which exhibited the highly prized oriental damask, it is said, were manufactured from what in India is termed *woultz*, and in Turkey *taban*, produced, as we believe, from some

artificial combinations of cast steel with carbon. To prove the highest state of tenacity and ductility to which the sword metal could be wrought, it was necessary that it should admit of being written upon with a piece of fine gold. When Syria, Persia, Hindostan, and Russia were served with their most beautiful arms from thence, it may be supposed that gun-barrels, scimitars, &c. were obtained from the same source by us also; and few among us but have seen these relics. The industry of our own traders, however, became on the alert to wrest both the secret of the composition of the Damascus metal, and the trade in arms made there, from the original makers. Mr. Adams of Wednesbury, who, we believe, professes to be in possession of the secret of preparing the Damascus iron, now carries on an extensive business on the faith of the public in this profession. It is hinted by Mr. Greener, that if Mr. Adams does really possess a knowledge of the true components, and of the processes of manufacturing them into Damascus iron, it was probably gained through the means of a letter, read before the Society of Arts in the year 1819, from Lieutenant-colonel Bagnold, of the army in India, in which the secret method of manufacturing this iron was detailed to his brother in England. We are however somewhat sceptical on this point; for certain it is that, however beautiful the barrels now called *Damascus* may be, and certainly as a toy they are so, yet in tenacity and the other qualities which marked the Damascus arms of former times, they are very inferior to our own twisted stub barrel of the present day; and it is doubtful if that even is now as good as it was some years ago. The beauty of the Damascus barrel of our manufacture is its bane; for its component parts of iron and steel do not amalgamate sufficiently to give the requisite strength to the mass, although they mottle it beautifully. The monopoly also of gun-barrel-making into two or at most into three hands, as Mr. Greener informs us is the case now, is much to be lamented. However respectable the character of those individuals may be, and as they appear by common report, yet the temptation is too great not to make us fear for the purity of the mixtures from whence even our best guns are forged.

2405. *The varieties of iron used to form gun-barrels* are greater than is generally supposed. We read of wire-twist iron used in the making Damascus barrels, Wiswoud's iron, stub-twist iron, charcoal iron, threepenny and twopenny skelp iron, and sham-dam skelp. Of these several varieties, that known as twisted stub iron is the best, and indeed the only one on which implicit reliance can be placed; and then only when we can be assured that real stubs, the relics of the best Swedish iron, rendered tough by long pressure, were employed in its composition. When, however, we descend to a lower material than real stub-twist, we fear that the more common iron mixtures are substituted, which, though of some reputation, are not to be implicitly relied on for either ductility or tenacity. We may be observed to write as having some doubts on the probability of procuring the real stub-twist barrel, which arises from our knowledge of the difficulty of meeting with the real stubs of former days. We however must console ourselves with the reflection, that, although stub-scrap is now difficult to procure, it yet appears that our best manufacturers do overcome this difficulty somehow; and that those who will pay a good price, we believe, can command a real stub-twist gun from any one of our reputed makers; although we still should fear its being not quite equal to those of former periods. What we would suggest is, that as the material of which the stub-twist barrel is formed is neither in such plenty nor yet equally good in quality, it requires the purchaser to make assurance double. Mr. Adams, a principal manufacturer of gun-barrels, informed Mr. Greener that the scarcity of real stubs is so great at home, that the foreign market is obliged to be resorted to to obtain them: but even there, we fear, the cloven foot has crept in; for there also stubs are not only dearer, but neither are they so good as formerly. The rage for underselling has deteriorated the article from its outset, the competition being, not who shall furnish the best, but who can, by any means, be able to sell at the cheapest rate. It is too well known, likewise, that our own horse-shoes of the present day, and the nails also which fasten them, are few of them made from the best Swedish iron, but from what is called malleable cast iron. Such therefore is certainly the present state of the manufacture of gun-metal, consequently many of those guns now placed before the public are calculated to deceive all who have not taken the pains to inform themselves of the distinctive marks between the bad, the indifferent, and the good. We seek not to depreciate the British manufacture of guns universally; on the contrary, under all the disadvantages pointed out, we are nevertheless confident that the advancement of science has overcome many difficulties, and rendered harmless many substitutions, particularly when such are founded on a practical knowledge of the nature and properties of iron under its several modifications and intermixtures. These advancements will overcome many difficulties, and will therefore continue to enable the honourable and scientific manufacturers of our country still to furnish us with safe and effective fire-arms.

2406. *A method of discovering spurious gun-metal from the real stub-twist*, Mr. Greener observes, may be resorted to by the following test:—"Require the gun-maker to stain the barrel under examination with the smoke-brown" (a modern invention of staining, the description of which is given in another part of his book), "and he will not be able to accom-

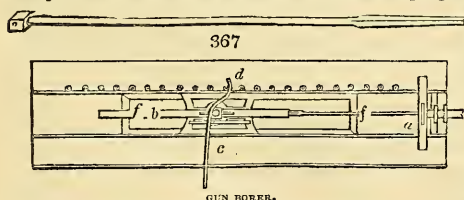
plish it, if the barrel be not genuine ; whereas nothing is easier if it be really made of stubs twisted. The matter may be thus explained : hydrogen gas acts only on iron, steel resists its action ; so that, when a barrel is properly finished, the steel remains quite bright, while the iron has become a beautiful jet-black, which will be easily recognised by attention to the appearance ;" which appearance is exemplified by a figure at p. 29. of his work. We have also added two cuts, which may assist the judgment of the inquisitive sportsman, with regard to the quality of the metal of the guns which may be placed before him in a gun-repository. Fig. 366. 1. represents the close spiral twistings of the grain of the metal of the stub-twist barrel. Fig. 2. presents to the eye the coarse and disgregated twistings and



imperfect mixture of the metals of the inferior barrels, known among gunsmiths as "the twopenny iron, or Wednesbury skelp barrel."

2407. *The method of making gun-barrels* is thus stated in the *Encyclopædia Britannica*, under the article GUN-MAKING. A somewhat similar account, less perspicuous, but much more detailed, may be met with also in the essay on *Shooting* :—"Having fixed, in the first place, on the size of the gun, and ascertained, as near as may be, the width of the bore, and the length and thickness of the barrel, the next thing the forger does is to take a portion of the metal of which he is to make the barrel, and to form it into the shape of a thin flexible bar, something like a cooper's hoop ; this bar or hoop must not be all of the same thickness, but that part of it which is to be towards, and is to form the muzzle of the piece, must be thinner than that which is intended to form the breech. An instrument called a mandril is then chosen, according to the size of the intended bore of the gun. The flexible bar, or hoop, is then heated, so as to make it ply easily, and is turned round the mandril, much in the same way as a riband of leather is turned round the handle of a whip. The edges of the hoop of iron, however, are made to overlap one another a little ; so that, when welded, all their joinings may be compact and solid, and no slackness appear where the lips of the bar or hoop touch one another. When the metal has acquired its proper heat, and the weldings are properly executed, the places where the bars overlapped each other are quite imperceptible ; and the barrel appears as though it had been made out of one piece, and finished at one heat." The mode of making the twisted barrel, we believe, does not differ materially from that of the common gun now described. The welding of both is the same ; the hammering the same ; the horizontal stroke, called the *jumping*, is the same ; and they are both wrought on a mandril in the same manner. They differ in this, however, that in the common gun the hoops are broad, overlapping one another considerably, having their edges welded down upon one another ; and, when finished, have the appearance of one continuous piece of plain iron. The bars of the stub-twisted barrel, on the other hand, do not in general exceed half an inch in breadth, and their edges do not overlap, but are just laid close together, and, when thus welded, the barrel receives horizontal strokes on the anvil, which make their joints swell up or protuberate, and then are hammered down, and thus made to form a compact and solid union, which the ductility of the component matter of the stub iron allows of. When the bars employed are very fine and small, it is called a *wire-twist*, and presents the appearance observed in No. 1. of fig. 366., and, consequently, this ready distinction between the indifferent metal and the good should be fixed in the memory.

2408. *The boring of guns*, according to Dr. Ure, in his excellent *Dictionary of Arts and Manufactures*, is thus performed :—"A barrel properly annealed, and slowly cooled, is now



ready for the borer, which is an oblong square *bit* of steel, pressed in its rotation against the barrel by a slip of wood applied to one of its flat sides, and held in its place by a ring of metal. The boring-bench works horizontally, and has a very shaky appearance, in respect at least of the bit. In some cases, however, it has been attempted to work the barrels

and bits at an inclination to the horizon of 30° , in order to facilitate the discharge of the borings. The barrel is held in a slot by only one point, to allow it to humour the movements of the borer, which would otherwise be infallibly broken. The bit, as represented by *a*, fig. 367. has merely its square head inserted into a clamp-chuck of the lathe, and plays freely through the rest of its length.

2409. "*The square machinery* represents in plan the *boring-bench* for musket-barrels; *ff* is the sledge or carriage frame in which the barrel is supported; *a* is the revolving chuck of the lathe, into which the square end of the bit, is inserted; *b* is the barrel, clamped at its middle to the carriage, and capable of being pressed onwards against the tapering bit of the borer, by the bent lever *c*, worked by the left hand of the operative against the fulcrum knobs at *d*, standing about two inches asunder. Whenever the barrel has been thereby advanced a certain space to the right, the bent end of the lever is shifted against another knob or pin. The borer appears to a stranger to be a very awkward and unsteady machine, but its perpetual vibrations do not affect the accuracy of the bore. The opening broach may be of a square or pentagonal form, and either gradually tapered from its thickest part, or of uniform diameter, till within two inches of the end, whence it is suddenly tapered to a point. A series of bits may be used for boring a barrel, beginning with the smallest and ending with the largest. But this multiplication of tools becomes unnecessary, by laying against the cutting part of the bit slips of wood, called spales, of gradually increasing thickness, so that the edge is pressed by them progressively further from the axis. The bore is next polished. This is done by a bit with a very smooth edge, which is mounted as above with a wedge of wood besmeared with a mixture of oil and emery. The inside is finished by working a cylindrical steel file quickly backwards and forwards within it, while it is revolving slowly. In boring, the bit must be well oiled or greased, and the barrel must be kept cool by water trickling on it; as the bit, revolving at the rate of 120 or 140 times a minute, generates a great deal of heat. If a flaw be detected in the barrel during the boring, that part is hammered in, and then the bit is employed to turn it out. Whatever irregularities appear, must be immediately removed. The outer surface of the barrel is commonly polished upon a dry grindstone, but it is better finished, and less dangerously to the workman, at a turning lathe with a slide rest. If a stone be used, it should be made to revolve at the mouth of a tunnel of some kind, into which there is a good draught to carry off the ferruginous particles. A piece of moist cloth or leather should be suspended before the orifice."

2410. "*The Parisian gun-makers*," Dr. Ure informs us, "are reckoned very expert; they draw out the iron for the barrels at hand forges, in fillets only one-ninth of an inch thick, one inch and a half broad, and four feet long. Twenty-five of these ribands are laid upon each other, between two similar ones of double thickness, and the bundle weighing sixty pounds, bound with wire at two places, serves to make two barrels. The thicker plates are intended to protect the thinner from the violence of the fire in the numerous successive heats necessary to complete the welding, and to form the bundle into a bar two-thirds of an inch broad, by half an inch thick; the direction of the individual plates relatively to the breadth being preserved. This bar, folded flat upon itself, is again wrought at the forge, till it is only half an inch broad, and a quarter of an inch thick, but the plates of the primitive ribands are now set perpendicular to the breadth of the narrow fillet, the length of which must be fifteen or sixteen French feet (sixteen or seventeen English), to form a fowling-piece from twenty-eight to thirty inches long. This fillet, heated to a cherry red in successive portions, is coiled into as close a spiral as possible, upon a mandril about two-fifths of an inch in diameter. The mandril has at one end a stout head for drawing it out, by means of the hammer and the grooves of the anvil, previous to every heating. The welding is performed upon a mandril introduced after each heat; the middle of the barrel being first worked, while the fillets are forced back against each other, along the surface of the mandril, to secure their perfect union. The original plates having in the formation of the ultimate long riband become very thin, appear upon the surface of the barrel like threads of a fine screw, with blackish tints to mark the junctions. In making a double barrelled gun, the two are formed from the same bundle of slips, the coils of the one finished fillet being turned to the right hand, and those of the other to the left. The Damascus barrels forged as above described, from a bundle of steel and iron plates laid alternately together, are twisted at the forge several times, then coiled and welded as usual. Fifteen Parisian workmen concur in one operation: six at the forge; two at the boring mill; seven at filing, turning, and adjusting; yet all together make only six pairs of barrels per week, which are sold at from 100 to 300 francs the pair, ready for putting into the stock." When we were in Paris we visited some of the best gun-manufactories, and by making use of the name of a member of the Institute, as we were by him authorised to do, we were very courteously received by all, and every process was explained—many were exemplified on the spot. They certainly differed somewhat from those of Birmingham, but they were fast treading on their heels in point of inferior mixtures of metals for their barrels. They candidly confessed it was in vain to compete with us in lock finishing, not because they were *unable* to do it, but because the *French gentry* were unable to pay a remunerating price for them. For a more detailed account of the different mixtures of metals and the various processes employed in the modern manufacture of gun-barrels, we would refer to Mr. Greener's valuable work. As a prelude to our own farther remarks on them, we beg leave to observe that the *bore*, the *caliber*, and the *gauge* of a gun-barrel are synonymous terms, each being equally used to denote the dimensions of its cavity. Thus, when we

notice the length of a gun-barrel, it is usual to describe its capacity of receiving the contents of its loading by one of these terms. It is thus that a barrel of thirty-two inches in length and sixteen in gauge, may be said to be well proportioned. The *gauge* being noted by the number of bullets (one of which exactly fitting the bore) would be required to weigh a pound."

2411. *A polished bore, is it desirable or not?* Many high-priced gun-barrels from Spain are very finely polished, and we have seen some equally so of English manufacture, the makers of which have dwelt on their superior value, as not suffering any lead to be caught from the passing shot. We, however, can aver from our own experience, that unless the metal of the gun be almost steel itself, polishing will not prevent its leading. Monsieur de Marolles, one of the principal authorities on these subjects, denies any benefit to be derived from the lessened resistance offered to the exit of the shot by the highest polish that can be given; averring in proof, that he has seen a barrel rough from the borer throw a charge of shot deeper into a quire of paper than another barrel that was highly polished within, the bore and charge being the same in both. However agreeable it may be to the eye to see the light playing over the whole internal surface of the gun-barrel, some are purposely roughened by being, as it is termed, ring-bored, *i. e.* circularly ribbed within to create friction; and though such barrels lead much, yet they often shoot remarkably close. Indeed it is averred by partisans of this plan, that they put the majority of the grains of shot into a disk, of the size of a man's hat, at forty yards. Guns of this kind are common among the colliers, and are so made to shoot for prizes; but as far as our own experience goes, no method of close prize shooting is equal to that of charging the gun by dropping the shot into the barrel, a few at a time, wrapped up in a little flax or tow, repeating the same until the whole charge is thus disposed of. We have heard of a prize-shooter who oiled his shot for the same purpose, and, as it was said, with much success; while others have wetted theirs. But it must be remembered that this practice is only adopted for *still-mark shooting*. The recoil is greatly increased by these means; and it is even said that the friction retards the velocity of the shot to such a degree, that a bird would escape; but this we are inclined to doubt. The barrel also in some of these prize-shooting guns, besides its ring-boring, is rather conical than cylindrical, with its base at the breech, and its apex at the muzzle. The *black diamond* gentry in the north are very expert at this species of shooting, and at the same time they are careless of the extreme risk they run.

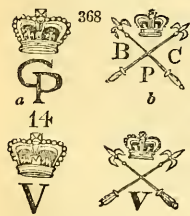
2412. *The barrel is next tapped for breeching*, by which is meant the process of adding the breech-plug into it; the method of doing it being thus stated by Mr. Greener, who, it may be premised, prefers *tapping* to turning the screws by means of lathes, as being by much the strongest method:—"The female breech, after being tapped, is screwed into the barrel to its place, and a tool, called a grinder, is introduced into the tube of the other barrel, and by being turned, either by the lathe, or by a brace, it cuts away that part of the female breech required to allow the male breech, when turned to a corresponding size, to fix in neatly. They are then filed down to the size of the barrels, partially bored in the inside, and a communication hole drilled through the under part. This being done they are ready for the London proof. Some, indeed, solder on the ribs; yet the general way is to send them off in this state lest they should burst, as the loss would then be greater." (P. 74.) We shall take another opportunity to describe the varieties in the breeching of guns, as connected with their influence on the shooting of the piece.

2413. *But few gun-barrels are entirely made in London*, although many are stamped as of London make. By far the greatest number of those met with even at our best gun-makers, are forged in the rough at Birmingham; and vast numbers are, as we have shown, finished there throughout. But fortunately we yet have some gun-makers, who, however they may receive the outer metal carcass, if we may so express ourselves, yet they re-bore it, and that by *engine work*, which, as it cannot err, enables them to finish off the proportions of the piece with mathematical correctness. The Mantons were long famed for so doing, and Lancaster no less so: indeed the latter, at the present time, may be considered as one of the first, if not the very first, gun-borer in the world. It is by means of machinery also that the barrels of the double gun of these makers are secured together, without that destructive use of the file, which we have elsewhere so much deplored. These circumstances, the truth of which we can vouch for, enables us to state our full conviction, that notwithstanding the wretched trash in the way of guns which do arrive from Birmingham, there yet remain even there good and honourable manufacturers, willing and able to insure a supply of well forged gun-barrels to meet the demands of the finishing gun-makers of London, and of our own large provincial towns. Our wish is not to dishearten the purchasers of guns, but only to make them cautious, and to enable them to distinguish between those that enter the *common hardware market*, and those that are met with at our gun-makers of repute. The former guns are finished out of hand—barrel, lock, stock, and all in Birmingham; and usually from inferior metal: the latter enter the shops of the most reputed makers in the rough, direct from the best sources; here they are re-bored, critically examined, and proved a second time. If also the various parts of the lock, &c. are forged in the rough in Birmingham, they are still re-filed, re-tempered, and finished in London, and then are

adapted to their several places. Some of our first-rate makers, particularly such as have added important improvements to them, we believe wholly manufacture their own locks. These remarks will also apply to some of our provincial gun-makers; but it is only here and there, where a very zealot in the art, and one who by living in a sporting neighbourhood, where due encouragement is given to talent, industry, and spirit, is able to get up his goods himself, after receiving them in the rough from the foundry. Colonel Hawker notices some of the country stars, and we also can bear testimony to the talent and spirit displayed by some of them. Mr. John Harvey, a gun-maker of Exeter, and a star in that line, presented the Prince Regent with a fowling-piece of such pretensions, that his Royal Highness considered it as a fit present for General Platoff, at that time a most popular character. As we believe what has been premised to be a true account of the progress of the gun, from its forging from the bar to its ultimate destination into the hands of the sportsman, we have only to recommend the purchaser of one to go to a good market; next to use much caution and circumspection in the examination of it; and after having taken the proposed purchase entirely to pieces, and examined each separate part minutely, that there be no flaws in it, and also that the several distinct parts adapt readily each to the corresponding parts, and that with them it works smoothly, and with due, but no more than due, force; that then it be tried as to its range, distribution of shot, and strength of indentation. Every one of these several properties should be separately noted, and where flagrant defects exist, consider well whether it will be better to attempt to remedy them, or to abandon the gun altogether. For instance, should a newly tried gun be found to recoil, under every variety of loading, would you abandon it altogether, or try to alter the powerful reaction? We say, if your fancy leads to the gun, or you have actually purchased it, have it restored; we have known several which have been remedied by so doing. Few other defects also, in the action of a gun, but may be remedied in the hands of a judicious artist; but do nothing that will compromise its safety.

SUBJECT. 2. *Proving of Gun-barrels.*

2414. *Proving of gun-barrels* is indispensably necessary to insure confidence in their safety. The cupidity of many of the great forgers of these articles, particularly of those who manufacture those nicknamed sham guns, sham-dam, park-paling pieces, &c. we again remark, should make every purchaser on the alert to assure himself that what he buys has been fully proved. To make surety double, wherever a new gun is bought from any other source whatever, except from out of the shop of a maker of reputation and under his warranty, we would most strongly recommend that such gun be proved under the purchaser's own inspection before he uses it. It is not indifferent metal only, or too limited a quantity of even the best metal that is to be tried by the *proof*. It is equally employed to detect any accidental flaw which may, and frequently does, occur in the forging of the barrel. The first attempt at establishing any compulsory trial of gun-barrels appears to have taken place about the commencement of the twelfth century, and originated with the company of gun-makers themselves; and it was at the proof-house established by them that the muskets of the East India Company were first proved. The enactment, however, which compelled a trial, became at length a dead letter until the year 1813, when the fraudulent conduct of the gun-manufacturers having brought our hand arms of all descriptions into great disrepute, and forced our sportsmen even to supply themselves from France and Spain, it was found necessary to call a meeting of the trade itself, the members of which formed themselves into a company incorporated by act of parliament. By the powers granted to the company it was made penal to manufacture and sell any gun without having it first proved at one of the proof-houses established by the company in London and Birmingham. Nevertheless, these enactments also were evaded, and the door to fraud remained unclosed, by which both the home and the foreign markets being again inundated with unsafe guns, the legislature itself interfered in the year 1815. Adopting the principles of the former act as regarded the methods of proving, "it was enacted that no barrel shall be received by any person to rib, stock, or finish, that has not been duly proved, under a penalty of 20*l*." It is also enacted, that all barrels shall be sent immediately from the maker to the proof-house, before the same shall be sold or transmitted for sale to any person whatever. A penalty of 20*l*. is attached to the breach of this enactment, and it further visits with the like penalty any one receiving such barrel to make up. It also made the same penalty to attach to the forger of the proof-mark of the London Company (*a*, fig. 368.), or that of the Birmingham Company (*b*, same figure).



GUN PROOF-MARKS.

2415. *The process of barrel proving is thus conducted*: — A quantity of powder proportioned to the size of the bore is introduced, over which a wadding of paper is put. A leaden ball is then put in and wadded down also with paper. On this process Mr. Greener makes the following remarks: — "These (the contents of the charge) have the property, owing to their construction, of expanding when struck by the copper rod that is used for the purpose

of loading, and by fitting the bore completely, are calculated to be of great advantage by increasing the friction, were not that advantage at the same moment partially destroyed by the way in which the paper is struck, tending to compress the powder, and necessarily rendering it less liable to ignite. All powder compressed resembles the composition in a sky-rocket, where, by excluding the air, the length of time required for the explosion of the contents is increased: the truth of this fact may be easily ascertained by tight ramming any gun, and then firing it over a sheet of paper, when a number of grains of powder will be found unburnt. Load the gun again with an equal charge; be careful not to ram it tight, and the whole will be found to have exploded. This proves that hard ramming prevents the full explosion of the charge." (P. 80.) Mr. Greener, however, objects to the method of proving the best barrels, which, as we learn, are allowed in their recoil to bury themselves in a mass of sand; whereas the common barrels are made fast by an iron bar, which checks their recoil. "This," he justly observes, "is a practice calculated to destroy the efficiency of the test to the extent of at least fifty per cent. Gunpowder explodes with equal force in all directions. It necessarily follows, that on firing a loaded barrel, the force of the explosion is equally exerted on the breech, the charge of lead, and the sides of the tube." "Were the best barrels fixed as the common barrels," he continues, "the explosive force, and necessarily with as firm a resistance from the breech as from the sides of the tube, would be entirely expended in the projection of the charge, and on the sides of the tube." (P. 84.) Our limits prevent our proceeding further with his ingenious arguments in proof of the neglect there displayed, but we would refer the reader to the work itself for full satisfaction on a point which concerns not only proving of barrels, but the projectile phenomena of action and reaction in the gun-barrel generally, thereby embodying some of the most valuable principles of projectiles. Many good judges, however, do not think the present method of gun proving sufficiently trying, but would subject every barrel to water proving, which is certainly more severe. A machine for this purpose is possessed of such powers, that it will detect the smallest flaw, by forcing the water through the disgregated fibres, and sometimes even tears open a weak part. Some of the gun-makers, therefore, who keep proof-houses, have also a machine for water proving; any one of whom will *waterprove* the barrel of any person who wishes it. If however the following story, related of a gunsmith in Dublin, has any foundation in fact, then it becomes imperative that every gentleman who wishes his gun to be proved, should himself, as already recommended, witness the process:—This trader, it seems, sent home a gun to the gentleman who had ordered it, with an assurance of its goodness, and the "certainty of its safety from the *proof stamp* to be seen on the barrel." As the story goes, when in a few days the gentleman proceeded to try his gun, to his astonishment there was no touch-hole. We have only to add, that the satisfaction of feeling secure is certainly worth the trouble of attending the process, and to ourselves the *wrinkle* gained would be worth at least half the cost of the proving.

SUBJECT. 3. *The Double Barrel Gun.*

2416. *Double barrelled guns* were formerly made with one barrel lying over the other, each barrel having a separate pan, hammer, and hammer-spring; but there was only one cock for both. The barrels were therefore made to turn round at the place where their breeches joined with the stock; so that, as soon as one was fired off, the other could be brought into its place, by pressing a spring with the right hand, and with the left turning the barrels on their common centre. This movement bringing the loaded barrel into its proper situation, a spring next descended into a notch, and kept it firm. From the description, it is evident that all the work giving motion to the cock must be confined to the part behind that at which the barrels turn round. The lock-works were necessarily complex; time was lost in changing the situation of the barrels; and yet even these evils did not deter the gun-makers of those days from adding three, nay, even four barrels to a single stock. There next appeared a somewhat more convenient, and rather less complex double gun than that just described. This improved method, as we are told in the essay on *Shooting*, did not "allow the barrels to turn round upon an axis; but, on the contrary, they were fixed one over the other, and each had a separate lock and trigger, that for the under barrel being consequently placed lower than the other. Still, although pieces of this construction possessed a great advantage over those that turned round, in the quickness of their firing, yet they were subject to one inconvenience, from which the others were exempt, and which arose from the situation of the under barrel; for that being fired under the same line of aim with the upper one, must necessarily shoot low." Our double guns are therefore now seen with each barrel in juxta-position with the other, or side by side.

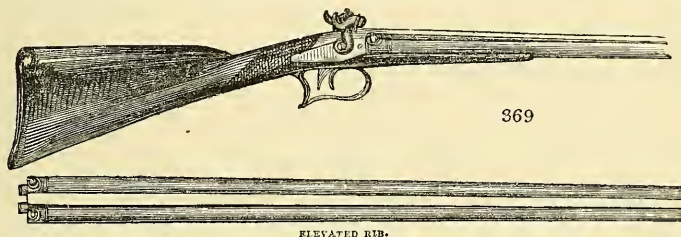
2417. *The present improved method of joining or putting double barrels together*, though progressing, is by no means even yet sufficiently attended to, considering the importance of the matter towards the safe and effective shooting of the piece. Each barrel is too apt to be filed away flat at the breech, and at the muzzle also, for a few inches, to bring the muzzles together; which marks error the *first*. To this the makers allege they are forced, because the country-made barrels are forged rather hollow in the middle, which evidently makes error the *second*.

In this state then the barrels are first bound together, and next are soldered together. But having their muzzles and their breeches thus united, what becomes of their rectilinear direction? It is evidently lost, and the left hand barrel must, of necessity, now point to the right, and the right barrel to the left of the correct line of aim. This is a homely exemplification, but as we wish to bring it within the ready comprehension of every one, we purposely so offer it. Manton's elevated rib, among other valuable properties, did much towards regulating the true direction of the barrels of double guns; but as all double guns have not the elevated rib, and yet are used with very fair effect, it will naturally be asked, How is it that all who use them succeed even so far? We answer that every one who has acquired the practice of shooting with the *single* barrel gun, does not find himself *au fait* with the *double*, until by habit he has learned to rectify the error pointed out. Nor is it readily imagined, how greatly erroneous is this inclination of the barrels; but we will endeavour to exemplify it by a quotation from an acute writer in the *Sporting Magazine* for April, 1824. It is there asked, "What is the best method of making double barrels, so that a correct aim may be taken from the *centre* of the barrels?" To this the following reply is offered, "If the barrels were placed parallel to each other, it would be but a small objection having the sight between them; but as guns are commonly made, the thickness between the bores of each at the breech is three-sixteenths of an inch, and at the muzzle one-sixteenth. Therefore, if the length of a pair of barrels was two feet six inches, which is the ordinary length, and the sight taken from the centre, and a ball was projected from one of them, it would make one-eighth of an inch declination from its true course in every two feet six inches it had to travel, which would make in forty yards a declination of six inches. From this cause, the right hand barrel always shoots to the left, and *vice versâ*. Now, to remedy this, suppose the thickness between the two barrels to be at the breech three-sixteenths of an inch, then let the space at the muzzle be the same; and when the barrels are thus laid together, and the sight placed between them, the ball would only make a declination of half an inch (the bore being five-eighths of an inch), being the distance between the centre of the barrel bore and the exterior of the barrel's surface." (P. 20.) We cannot likewise but see that the methods by which some gun-makers affect to rectify this error in a degree, by fling away so much of the breech surface as shall bring the calibers of the barrels into a more rectilinear direction, is remedying one defect by making a greater, and one by which extreme danger is incurred, although it might be avoided by adjusting them as proposed above. However the junction of gun-barrels is effected, it is essential that it should be so done as to make the centres of the calibers of the muzzles and the centres of the calibers of the breeches, if not exactly equidistant, at least considerably more so than at present; the approximation being in proportion to the length of the barrels. We are somewhat surprised that Colonel Hawker should pass so slightly over this matter, particularly when he states so astounding a fact, that not one gun-maker in fifty knows much about it. Surely it is a subject of some importance, one indeed very much so to him who shoots with a double gun. This divergency cannot be corrected in the common method of "setting" or "putting" barrels together; nor indeed will that pointed out in the above quotation be sufficient, we apprehend, to do it completely: much, however, we repeat, must depend on the length of the barrels, and on the method of taking aim by the shooter. Colonel Hawker seems to consider this convergency of the barrels, as set in the usual manner, to be neutralised by the *swerve* or *kick*, as it is called; and which alone, he hints, would just bring the centre of the shot into the bull's eye. With deference to almost every opinion from this source, we must nevertheless beg leave to differ from this, and we would ask, What becomes of the *swerve*, or *kick*, of the single gun, which that also must be liable to have in every case, but a considerable one in some hands? Would any misdirection of that barrel become excused on that score? We answer, No; because the direction is correctly given at first, and the sight of the barrel is true, but in the other it is false! Much as we admire Mr. Greener's usual line of argument, we regret that on this subject we disagree with him, also, when he says, "To make them (the barrels) uniform (*i. e.* lessen that convergence we complain of) it requires that they should be reduced or flattened, to allow the thick or heavy end to join closer. If this be not incurring a risk, we do not know what is; and we do hope that no respectable gun-maker will rectify this convergency in the barrels towards each other by any other means than firmly setting the centres of the muzzles rectilinearly with those of the breeches, by the agency of an *intervening substance*, as hard soldering in the centre, metal ribbing it above and below, and then, and then only, the silver sight will not be a guide to error." It is very much to the credit of Manton that his numerous improvements reached to this subject also. His double barrels were placed together without at all reducing them, and consequently we never heard of the bursting of one of his improved breeched guns. It is not thus with many even respectable gun-makers, of whom Colonel Hawker says that most of them are in error with regard to putting together barrels; but he is not, however, sufficiently explicit in informing us how he would have it remedied. It is not often our excellent Mentor is thus taciturn.

SUBJECT. 4. *Of Elevation and the elevated Rib.*

2418. *The line which a charge of shot takes when fired from a double gun, even if it be at all rectilinear, can only remain so for a very few yards, which point-blank course is called in gunnery the "line of impulse."* However, as even this is uncertain, and if it were otherwise would be of no importance to our present purpose, we will consider the range or the line of flight of the shot as curvilinear. Whether it describe a true parabola, which is disputed, or one less parabolic, is also of little consequence; it is sufficient for us to be apprised, that the shot in its flight from the gun is influenced throughout by the laws of gravitation. From the moment of its ejection, its tendency is to the ground, where finally it must rest; but the distance to which its flight is prolonged, will depend on the goodness of the gun, the materials it was charged with, and the tact displayed in proportioning such materials to the size, &c. of the piece. The curvilinear direction of the shot being inevitable, it follows that to bring them to the mark aimed at requires corrections by artificial means; one of which is by a straight stock, but principally it is effected by an artificial elevation of the muzzle of the piece, and that in the proportion of the length of the barrel, it being required to be more considerable in a long than in a short one. Several methods are practised for elevating the shot mark of the gun, but the elevated rib on Joseph Manton's principle, appears the best.

2419. *The elevated rib.* On this subject Mr. Greener may be referred to with much advantage. Colonel Hawker, also, after his impressive manner, here shows the *master*, and it is not a little remarkable how closely the opinions of both coincide, as a reference to their several works will prove; nor would it be at all to the discredit of even such a *pupil* as Mr. Greener, to benefit by the tuition of such a *master*. "Different lengths of barrel," says Mr. Greener, "require a difference in the height of the rib (*fig. 369.*).



ELEVATED RIB.

A greater height is also required for a person accustomed to use a crooked stock; and *vice versa*, of course. Both Colonel Hawker and Mr. Greener agree, that the elevation of rib usually met with is not sufficient, which is a truth we have long advocated. The usual elevation will not often effect the intended delivery of shot to the mark even at forty yards with a moderate charge of powder; and a heavy one of large sized shot must, of course, err more. For it must be allowed that there are few sportsmen sufficiently mindful, or even equal, to such quickness of recollection, as *instantly* to accommodate their aim to the varieties of distance, range of gun, and altered charge; and yet no one can be called a complete shot who is not *au fait* at all these. Mr. Greener informs us that the sum of his trials, which have been, he says, numerous in the extreme, convince him that with "heavy charges of shot the droop is full twelve inches at forty yards," but that with less charges of shot the line of flight will be more direct. The length of barrel, however, must be taken into the account in adapting a rib to it. "A two-foot-ten gun," Colonel Hawker observes, "with the rib no more elevated than a two-foot-eight gun, invariably puts the body of the charge under the mark at all distances beyond thirty-five yards." There is also much pith in the following remark of Mr. Greener, who, we have already shown, admits that length and height of elevation should be consentaneous: we suppose he means in *field guns* in general. "I believe, however," he says, "Colonel Hawker has fallen into an error, when he says that long guns require greater elevation than short ones. But does not a long gun keep the shot more together? Is not more force generated? and is not the initial velocity greater than in a short gun? If these be facts, why is more elevation required to be given if the shot do not droop? I apprehend the colonel means, if the same height be required to be given above the mark, nothing can be plainer than this—that if one pair of barrels be four inches longer than another, and the elevation the same, there cannot be as many lengths in the forty yards of the longer barrels as of the shorter; and hence the difference when multiplied. I think, therefore, he cannot have taken into consideration, the superiority in their shooting; for there cannot be a doubt, that, if a gun keep the shot together longer, it cannot require that allowance for drooping, which a shorter gun does." (*Loc. cit.* p. 107.) For the information of our readers who may feel an interest in the setting of gun-barrels, as every sportsman who carries a

double gun ought to do, we advertise him that Godsall, of 86. Oxford-street, has a plan by which the barrels of the double gun cannot fail of having their cylinders set mathematically true. That difficulty, therefore, to a critical setting of the barrels, which occurs from filing away the outer substance of many of those from Birmingham (purposely so served to lighten the piece) is thus obviated. Mr. Lancaster, also, takes care to rectify the bore by a self-acting machine, which forms a correct taper from the breech to the muzzle. These improvements, therefore, deserve all possible encouragement from the public.

2420. *The sight, or sight plate, or rim.* When the elevated rib is not attached to a double gun, there is of necessity a connecting medium between the two barrels, besides the soldering which holds them together. This consists of a metal plate or rim above, and of another underneath. To either the elevated rib, or in its absence to the metal plate, then called the *sight-plate*, the little silver knob, known by the name of the *sight*, is attached. Colonel Hawker ridicules this usual gun-barrel appendage, and without doubt a practised shot can do as well without it. It is, however, seen on all double barrelled, and on many single guns also; and we therefore notice it, and he does the same. It should be larger or smaller, as the gun is longer or shorter; and when the rib is much elevated at the breech, the metal sight ought to be large in proportion. Few practised shooters, however, are guided by the sight. We, on the contrary, believe the hand gains a habit of pointing the gun at the bird, not of course without the eye having been directed to it; but there the eye rests, and the hand there directs the gun by a sympathetic effect, most difficult to describe, and not easy to imagine even; but unquestionably such is the fact. How does the blind man know when he has reached his own door, though it should be in a row with twenty others? He does not measure his steps, yet an instinctive feeling pervades him that he is at home. We have elsewhere noticed a blind guide who accompanies strangers over the mountains in North Wales, through ravines, over narrow passes, and yet has never been known to lose his way. Forgive us, gentle reader, for we have lost ours; but the interest of the subject misled us. We are yet only on the threshold of a knowledge of sympathies. We have capabilities unknown to us, until necessity calls them forth. Thus the eye only glances at the bird, it is the hand that does the rest with the practised sportsman. Trouble yourself not therefore, youthful sportsman, about your sight or sight-plate; learn to measure distances by the eye, and accommodate your elevation to them. A point-blank direction without an elevated rib will not serve you beyond twenty-five yards; neither must you trust wholly to an elevated rib. For all long shots it is usually set too low, but you must shoot above the gauge in a moderate length, otherwise you will be as much above your mark, as at others you may be below it. We shall, however, recur to this again. It is an indisputable fact, that an erratic but clever fellow offered a heavy bet, that after two days' practice only he would shoot against any one of a certain set of fair shots with whom he was acquainted, by merely pointing his gun from under his knee, and consequently without any eye aim, and he won his bet by killing three out of every four shots.

2421. *The advantages of the double gun in a sporting point of view over the single gun*, few unprejudiced persons we think would deny. As far as sport is concerned, in the quantity of game to be obtained, there is certainly no comparison between them, particularly at the commencement of the season, when double shots may be expected; and further, that, should one barrel fail, the other is at hand to redeem the loss. After thirty years' shooting with double guns principally, and also generally in company with others similarly armed, we have ourselves never witnessed a serious accident from the use of the double gun. The additional weight complained of by some is more ideal than founded on fact; the single gun is not only longer and comparatively heavier, but its additional length employs its leverage unfavourably on the arm and loins of the sportsman. We are not prepared to deny that the double gun in killing hands and craving minds may tend to lessen the stock of game; but it is not, we maintain, one-fourth as much so as the night net-work of the poacher; and yet we have known many who will not allow a double gun to cross their fields, and at the same time are too careless to *bush* them after harvest.

SECT. II. *The Caliber or Bore, the Length and Weight of Barrels, their Range, Force, Regularity of Effect, Recoil, Liability to burst, &c. &c.*

2422. *To forge and bore barrels* in such a manner as to make them carry their shot with rapidity and force, has long been the study both of British and foreign gun-makers; and that they should not yet have come to any common understanding or agreement on the subject, is a sufficient proof of the intricacy of it. Foreign gun-makers having had the start of us, long ago taught and practised many conceits on the matter. Some made superficial scratches within the barrel by a mandril; others completely rifled the barrel, which was thought to assist the projectile force, and also the regular garnish of the shot. A few English artists in this line straight rifled their pieces for this purpose; but the practice never became popular, for it was found only to foul the barrel more quickly. To make it at all effective, the rifling must necessarily have been deep, by which the barrel was either so much weakened as to become unsafe, or otherwise must have had so much metal as to

prove burthensome to carry. The difficulty of cleaning such a piece, and of adapting such wadding as should shut out windage, afforded additional reasons for discontinuing the practice of deep rifling fowling-pieces. Mr. Greener considers this failure of the rifled barrel to arise from the necessity that exists, that the shot barrel should be more elastic in property than resistant by dead weight; and it certainly is true, that the best barrels to carry shot are found among those which have had much hammer hardening expended on them. Such, although of very light weight, have carried heavy charges with entire safety, projectile force, and slight scattering; but they were flint-guns.

2423. The *flint gun-barrel*, by the recommendation of Colonel Hawker, should not be bored cylindrically throughout; but, on the contrary, "A little tightness or contraction just where the shot first moves should be preserved." The barrel may then proceed cylindrically to within a few inches of the muzzle, when the remainder in both flint and percussion barrels should be relieved to the exit, by which relief the colonel contends "the gun shoots as close as it can do" compatible with the strength and quickness required. This method of boring is now much practised, and has been long a topic of discussion both abroad and at home. The intention of contracting the breech end of the barrel, the propriety of which we have some doubts, is, that it may constrict the charge; by which means the barrel will not foul so soon, and, what is of more consequence, it is supposed to increase the force of the discharge, by detaining the closely collected shot until the powder is sufficiently inflamed to throw it out with the requisite force. At one time this contraction of the breech end was made more considerable than at present, when, as might be expected, some accidents taught the gun-makers more caution. Both the relief above, and the contraction below are now so slight, particularly the latter, as to be entirely overlooked by many owners of guns; but a close fitting wadding passed down the barrel will detect the one by the ease, and the other by the constriction, with which it moves up and down. It is one of the inconveniences that attends this method of boring, when at all considerable, that the wadding which fits exactly above, will pass with some difficulty below, which will increase as it approaches the breech. Let the purchaser of a gun, therefore, ascertain by a gauge the exact diameter of each portion of the bore of the piece, that he may adapt his wadding thereto. Indeed, the only proper wadding for relieved guns is one with a considerable degree of substance and some elasticity,—Beckwith's for example. A wadding might also be slightly notched, which would adapt itself to the variable diameters of the bore of the flint-gun, or a wadding perfectly elastic might be employed. After we had penned this paragraph, we met with the following in the essay on *Shooting*, which, although it bespeaks a more decided objection to *relieving* the barrel than any we are prepared to offer, yet, as it meets our views on the necessity of being particular as to the wadding employed for them, we will introduce it:—"As hat is seldom employed for wadding, it is scarcely possible but that more or less of the flame will escape past the wadding of tow or paper, and insinuate itself among the grains of shot. This flame will expand itself laterally, as soon as it arrives at the widened part; and, by driving the grains along the sides of the muzzle, will communicate a whirling motion to them, that will increase their divergency very considerably." (P. 106.) It must not, however, be supposed, that every gun-barrel of the present day is thus bored; on the contrary, some experienced makers of guns, as well as the purchasers of them, prefer their being bored cylindrically throughout; and many such barrels shoot excellently well, and are, of all others, the least likely to recoil. Indeed, no method of boring yet devised will insure a specific ratio of action; but the methods of relief now practised have certainly gained ground amongst the best gun-makers, which, although it is noticed as somewhat novel, was a very old practice. By this we do not mean the old "bell-mouth" enlargement, as useless as it was unsightly; although Espinar advocates even that as having the effect of making the gun throw its shot closer, but which we cannot believe. We only therefore allude to that "delicate relief," as Colonel Hawker calls it, which nobles and persons often fail to detect, and many gun-makers fail to point out to their customers.

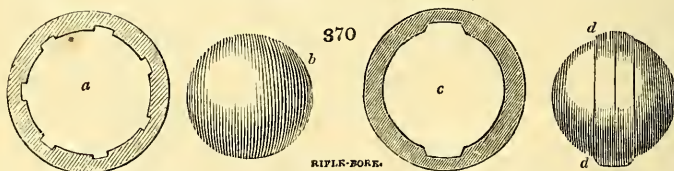
2424. The *percussion barrel* is made heavier and stronger throughout than the barrels of the flint-gun. It is also at present fashionable that it should be bored with a little relief forward, which Colonel Hawker tells us "has the effect of making the gun shoot as close as it can do compatibly with the quickness and strength required." This method, besides the being sanctioned by the colonel, is also advocated by many other judges; and as it really seems to work well, while it does so it will be prudent to pursue it, although we know at this moment many most excellent detonators, which are bored cylindrically throughout, without the slightest relief or contraction, which shoot equally well. The increase of metal in the detonator, we think with Colonel Hawker, to be an essential requisite: first, to resist the quicker, and consequently more forcible expansive force applied by the ignition of the powder through the agency of detonation; and next, to lessen the recoil so much more forcibly felt in most detonators than in the flint-gun. This increased weight of the percussion barrel Mr. Greener however objects to; and inquires, "Whether some of the best flint-guns met with have not been very light? To this we answer, that it was the principle on which the explosion of the flint-gun was effected, that enabled it to

be made lighter, and yet to remain equally safe in using : but we know also, that where it was required to add to the rapidity and force of ignition, it then became necessary to increase the substance of the barrel. Mr. Greener, however, would have us acquire this increase of power of resistance, not by quantity of material, but by increased tenacity and elasticity in the metal the gun is formed of ; and we agree that it would be a great improvement if it could be brought about. But what is our prospect of it, "Is it not the general complaint, that gun-metal is not by any means what it was. We have shown that it is not, and therefore we do not think, as Mr. Greener asserts, that any recommendation of increased weight of metal to the percussion barrel beyond that of the flint-gun "is founded on ignorance ;" but, on the contrary, that the very reason which Mr. Greener gives to prove it, is that which we think affords evidence of its perfect rationality — *the explosive force created*. We must conclude this subject by observing, that although we do not think the present general method of gun-boring has by any means arrived at so much certainty as to produce any uniform results, yet that certain gun-borers do produce barrels that almost invariably are good, both in their range, and in the regularity and close garnishing of the shot they carry ; and with that for the present we must content ourselves.

SECT. III. *The Rifle-gun.*

2425. *The rifle*, as a variety of the gun, is often called into action for sporting purposes ; in deer stalking it is indispensable ; and in rook shooting it is used by many. The methods of *rifle boring* having lately undergone considerable alteration, it is necessary that we glance at them, referring the reader for further information to Dr. Ure's *Dictionary of Arts and Manufactures*, and for ocular demonstration to Mr. Beckwith, of Skinner-street, one of the appointed makers. We hardly need inform the reader, that the rifle-barrel is much stronger and heavier than that of either the flint or the percussion-gun ; and that its bore has long been manufactured with indentations within, which form spiral grooves throughout its extent. It is true that some of the early riflers used straight rifling ; which method, by many judges of the present day, is not considered favourable to a point-blank delivery of the ball ; for the ball being forced by the spiral grooving into a rotatory motion on its own axis, was supposed to maintain a much longer rectilinear direction than it does when ejected from a barrel only straight rifled. The mechanical means of cutting the rifle grooves, Mr. Greener informs us, are very simple :—"On the end of an iron rod is fixed a cutter, with teeth like the teeth of a saw, which cut the required shape of the groove ; and on the opposite side of the rod is a piece of copper to keep it steady in the barrel. The spiral movement is given to this rod by a socket, through which it works similarly to a barrel already rifled ; which, together with the barrel, is fixed on a sort of bench from six to nine feet long. Sometimes the rod itself is twisted to the degree of spirality wanted ; and this rod, working through two square holes of its own size, is of course turned while passing through. On the end of this rod being introduced into either end of the barrel, its action is regulated by a screw, raising or depressing the cutter so as to indent it more or less ; it is then driven with force through the barrel, and repassed a few times, until it passes easy. The cutter is then made to cut again by a turn of the screw, and again forced through, repeating the process until the groove is sufficiently deep. The cutter is of course directed by the rod, and the groove is cut with the same degree of turn as that to which the rod is twisted." (P. 194.) (See Greener on the gun ; also Baker on the rifle, where every particular relative to the rifle practice of late years is amply detailed.)

SUBJECT. 1. *The Modern Rifle.*



2426. *New method of rifling gun-barrels.* For this great improvement we are indebted to George Lovell, Esq., director of the Royal Manufactory of Arms at Enfield ; and the difference between the former and the present proposed method of rifling will be apparent by what we have already described, and that which is exemplified in *fig. 370*. "The intention in all rifles," says Dr. Ure, "is to impart to the ball a rotatory or spinning motion round its axis, as it passes out through the barrel. This object was attained, to a certain degree, in the rifles of the old pattern, by cutting seven spiral grooves into the inside of the barrel, in the manner shown by *a* ; the spherical ball (*b*) being a little larger than the bore, was driven down with a mallet, by which the projecting ribs were forced into the surface of the ball, so as to keep it in contact with their curvatures during its expulsion. Instead of this laborious and insecure process, the barrel being now cut

with only two opposite grooves (c), and the ball being framed with a projected belt, or zone (d), round its equator, of the same form as the two grooves, it enters so readily into these hollows, that little or no force is required to press it down upon the powder, yet, so much more hold of the barrel is at the same time obtained, that instead of one *quarter* of a turn, which was the utmost that could be safely given in the old way, without danger of stripping the ball, that a *whole* turn round the barrel, in its length, can be given to the two grooved rifles. The result is, that better practice has been performed, at three hundred yards, than with the best old military rifles at one hundred and fifty yards. This mode of rifling, however, is not new, but in fact is one of the oldest upon record, and fell into disuse from faults in the execution. The idea was revived in Brunswick, and in Hanover also; but the judicious improvements it has received in Mr. Lovell's hands have rendered it, when skilfully used, a weapon of unerring aim, even at the prodigious distance of seven hundred yards." (*Diet. of Arts and Manufactures*, p. 478.)

2427. *The locks for the military rifle* are also receiving an important improvement by Mr. Lovell, who has greatly simplified their mechanism by reversing the position of the main-spring, which increases the compactness and strength of the works, yet renders them more effective, durable, and easy of repair. By this alteration the ignition is so certain, that a misfire is rare in the guns of the Royal Manufactory; and these improved rifles have completely superseded the old Brown Bess's of the British army, after of course meeting with the usual resistance consequent upon what are called in disparagement "new fanglements." It is said that the Duke of Wellington advocated the retention of what had been his victorious weapon to the last day of his life. A further improvement is now in progress in rifles by the adaptation of the American Colonel Colt's pistol-revolving principle to them (improved upon by Messrs. Deane and Adams), whereby a succession of balls can be discharged as quickly as the trigger can be pulled; though this is thought to be better adapted to the exigence of warfare than to the skilful science of rifle shooting.

2428. *The length of gun-barrels* has of late undergone a very considerable change; formerly it was thought indispensable that every barrel, to shoot well and kill clean at considerable distances, must of necessity be long; and to this day may be seen, looped up over the mantel-piece of some of the old farm-houses, and even of some of the halls of the old mansions, gun-barrels but little shorter than a garden rake. Our ancestors, it is well known, seldom shot with a gun-barrel of less length than from three and a half to four feet; but what they acquired by length, they gave up in width of bore, contenting themselves with five-eighths of an inch, or seventeen gauge. Query, Were not standing shots more in fashion than at present? But for a gun of such length to be met with now, unless it be a duck-gun, at least ten others may be seen of very curtailed dimensions. Indeed, it may be doubted, whether in the usual course of reaction of public opinion, the barrel is not now in many instances too much shortened. It was held, in these times, that a lengthened range of the shot required an increased length of barrel; for it was then argued, and by some is so still, that when a barrel was short, the charge of shot quitted it before it had received the whole impulse of the powder. It however may, on the other hand, be suggested with reason, that where the barrel is too long, although every grain of the powder may not have become inflamed, yet the propulsive force having arrived at its maximum before the shot has reached the mouth of the piece, of course a hurtful resistance from the sides of the barrel commences. If we remember rightly, it is on these grounds that Mr. Robins, an oft-quoted authority of repute in the science of gunnery, is decidedly in favour of short barrels. His experiments, which are detailed in almost all sporting works, tend, as he states, to assure him, "that the sportsman may please himself as to the length of his barrels, varying from twenty-eight up to forty inches; but that either above or below those dimensions, the range of the shot began to fail with him." Nothing, we think, evinces how little we do actually know of the true theory of projectiles more than the following facts: first, the diversity of the opinions which are held on the subject; and secondly, that the opinions formed thereon, are in so many instances changed to others, in some cases diametrically opposite. We are inclined, therefore, to think that accidental circumstances may have as much influence on our judgments on this matter as direct experiment. Thus, when we resided in Essex, and pursued wildfowl shooting on the adjacent shores, we then inclined to favour long barrels, not only for this, but for every other variety of shooting; length! length! was then all-in-all, as far as barrels were concerned. May not this predilection for wildfowl shooting and duck-guns have had some little to do with Colonel Hawker's conversion to the long barrel creed? We know that the strongest minds and the soundest judgments (and the Colonel unquestionably possessed both in an eminent degree), are capable of becoming warped by being daily mixed up with pursuits somewhat adverse to those on which their original conclusions were formed. We are warranted in this remark, it being notorious that the Colonel was the most ardent and most expert wildfowl shooter in the kingdom. As regards ourselves, a subsequent course of partridge shooting in the midland

counties, and of grouse shooting in the north, has revived our predilection in favour of using moderately short guns, from having found them equal to all the general purposes of field shooting: and even were they somewhat less effective, without doubt they must prove particularly convenient to those who, like ourselves, have short arms, and bend under the burthen of increasing years, which make every ounce of weight an object in carriage. We nevertheless have always thought the subject so important, and yet so much in abeyance, that we some years ago added our own efforts to those of others in the experimental field. We then occupied a shooting locality in the north, far from the busy haunts of men; yet even there we managed, by borrowing of some, hiring of others, with the use of our own, to become enabled to command a sufficient number of guns of almost every length. With these we varied our experiments in every possible way, the result of which was to establish a firm conviction in our mind, that *there is a determinate length in every barrel*, with which it will carry its shot in the most effective manner; and that, whether it be moderately short or very long. Repeated trials will give this *length*; but this is not all, for every barrel without an exception, be it long or be it short, will likewise perform best with one determinate charge both of powder and shot, and with that only. We may further add, that the proportions of both powder and shot, not only as regards the gun itself, but also as regards each other, will and do vary under particular circumstances; as extremes of heat or cold, dryness or moisture, &c. &c. These agencies, we contend, will act not only on the powder and the shot, but also on the gun itself; nor are they altogether without their influence on the practice of the gunner, as daily experience convinces us. Impressed with these convictions, and further certified by observation and experiment, we have arrived at the conclusion that, however it may be proper in sporting works to introduce a general scale of proportions between the powder and the shot, and however just such may be in general cases, yet, that of necessity, they must vary in very many others; which attentive observation alone can teach. These remarks may probably by some be called "wire-drawing," but we appeal to the well informed and observant sportsman for the truth of them. Our direct opinion on the matter in hand, the most proper length for a gun-barrel, is this:—let it be one neither absurdly short, nor preposterously long; in a word, its length, its weight, its gauge, &c. should, to a certain degree, be regulated by contingent circumstances connected with the gunner, and with the objects pursued, &c. &c.; and above all, let it be subjected to experimental trials varied in every possible way, all which will not only give confidence to the tryer, but will also improve his practice. Be it observed, however, we consider we are now addressing a tyro.

2429. *A medium length of gun-barrel*, we repeat (for the subject is an important one), is to be preferred in most cases. A very long barrel is liable to have the force of its discharge lessened by the increase of counter pressure in the greater volume of external air in a long than in a short barrel. Its force must also suffer by the loss which the elasticity of the propelling gas experiences in its lengthened transit through an extended range of barrel. In such cases it is probable that the shot, which should leave the mouth of the piece at the instant when the propelling force has gained its maximum in a long barrel, are detained beyond this point, and therefore must lose propelling force at every additional inch beyond that particular limit of capacity we have pointed out as inherent in each barrel; and which properties, and which quantities of charge, nothing but repeated and varied trials can teach the owner of the gun. Thus it is, on the other hand, that a barrel, though not shorter than those of some other good shooting guns, will not deliver its shot with force and precision, because, from some peculiarity in its bore, its metal, or in the method of loading it, on which likewise very much depends, the shot are ejected before the *maximum* of expansive force is obtained from the ignited powder. This will often happen when the powder is tightly rammed, when, in this particular case, the want of length acts thus. The velocity with which the flame of gunpowder expands when uncompressed, being much greater than that with which the shot moves forward, the elastic fluid must continue to propel the charge until it reaches the muzzle of the piece, which in ordinary circumstances is very quickly done; but in this case being delayed, it encounters, by a weakening of its initial forces, so much lateral friction and decreasing forces in the propelling powers as to delay, and also weaken, the discharge, and that in the ratio of its leaving the muzzle, either before or after the whole of the powder is inflamed, or, in other words, before the elastic fluid either is or is not sufficiently expanded. Enough has been stated, we hope, to prove the propriety of avoiding either evil, that of having barrels too long or too short. *In medio tutissimus ibis* here, as in many other cases.

2430. *Length, gauge, and weight, may also be considered correlatively*. The two former, as practically regarded, are proportions of the gun-barrel not necessarily relative, although in descriptions they are usually coupled together. We need hardly inform the tyro that *gauge* is the diameter of the bore or caliber of the barrel measured by a bullet, and that the number which a pound of such bullets weighs, marks the gauge of the barrel; consequently, the higher is the number of bullets, the smaller is the caliber. We shall therefore now proceed to notice these proportions, and shall commence by stating what may be considered

as a medium length of gun-barrel. Colonel Hawker confines the extremes to two-feet-eight, and three feet. Mr. Joseph Manton, of gun-making celebrity, on whose opinion the colonel relies much, and with sufficient reason, for he was an experimentalist, and took little on trust, recommends two-feet-eight and twenty-two gauge as a general sporting length and bore of gun-barrel. A barrel of a wide bore and but limited weight, it is evident, should carry but a light charge. We also advocate a small bore; but we think Manton's proportions are in the extreme: we should rather recommend an eighteen or nineteen gauge; such a bore is safe, and it makes the gun both light and strong. We are much mistaken if it does not also in good hands kill cleaner, and proves fully equal in range to one of larger bore. That amusing Olio, the *Oakleigh Shooting Code*, tells us, "The fowling-piece to be recommended for general use is a double barrelled detonator, weighing about eight pounds; the barrels thirty or thirty-two inches in length, sixteen gauge, and made of twisted stubs. It is not sportsmanlike to use double barrels of a greater caliber; nor are longer barrels convenient on account of their weight; although additional length, not carried to an extreme, or a larger caliber, may probably render them more effective, in so far as they will sustain a heavier charge. Single barrels, for general use, may be thirty-four inches long, fourteen gauge." (P. 24.) "The barrels of the grouse gun," the same authority tells us, "should be thirty-two inches long, sixteen gauge; a single barrel for grouse shooting should be thirty-six inches long, and a fourteen or fifteen gauge. If selected for partridge shooting only, the barrels should be thirty inches, sixteen gauge; or a single barrel thirty-four inches, fourteen or fifteen gauge. If selected for cover shooting only, the barrels should be twenty-eight inches, sixteen gauge, or single barrel thirty-two inches, fifteen gauge." Mr. Baker's scale of length of barrel, gauge of caliber, and proportions of powder and shot for the same (being, he informs us, the actual result of a series of experiments) cannot fail to prove interesting and useful to every lover of the trigger, and as such we recommend a reference to it as it stands in his book.

4231. *A larger diameter of bore* than that we have stated is, however, advocated by many respectable authorities; and as it is our object by a juxta-position of conflicting opinions, to reach the truth without reference to any we may have formed ourselves, we offer the following ingenious and scientific remarks on the subject:—"There is a prevalent, yet mistaken notion among sportsmen, that narrow bored guns shoot better and closer than wide ones. The reverse, however, would seem to be the case, if the following calculation be correctly made and the results fairly stated: No. 1. a small bored double barrel, takes one ounce and a half of shot, and averages eighty in a given piece of paper; No. 2. a gun of three-quarters of an inch bore, takes one ounce and three-quarters: now, the charge of No. 1. is to the charge of No. 2. as eighty to an unknown quantity, which the above proportion will give, viz. $1\frac{1}{2}$ (or 6) : $1\frac{3}{4}$ (or 7) :: 80 : $\frac{80 \times 7}{6} = \frac{560}{6} = 93\frac{2}{3}$ or $93\frac{1}{3}$. Therefore, if No. 2. averaged $93\frac{1}{3}$, it would shoot as well as No. 1.; but it averages 110 nearly. Again, No. 3. nearly of inch bore, takes two ounces. Therefore, in the same way, $1\frac{1}{2}$ (or 6) : 2 (or 8) :: 110 : $\frac{8 \times 110}{6} = \frac{880}{6} = 125\frac{2}{3}$; but it averages 140. In all these cases, the distance and mark were the same. It therefore, under this view, would appear, that the wide bore shoots the best; it also shoots very much the strongest; I believe for this reason, that as the barrel is enlarged, less of the charge in proportion is liable to the action of friction." (*Sporting Magazine* for June, 1826, p. 86.) This extract, be it observed, constitutes but a small portion of the interesting matter connected with gunnery, to be met with in this article, and we therefore recommend it to the reader's attention as it stands in that respectable periodical.

4232. *The extent of the range*, the forcible and rapid propulsion, with the regular concentration of the shot within a moderate disk, are essential properties to constitute a good gun-barrel. We have already alluded to the *range* in all general cases of field shooting to be greatest, when barrels of a moderate length are employed, without prejudice however to the incontrovertible truth, that a very long and very heavy barrel will carry its shot farther than a short and light one; but we would ask, who, except the wildfowl gunner, would burthen himself with such a ponderous mass? As regards the extent of the range, we think that a very great mistake is made by many sportsmen, who advocate the use of small shot as equally effective with shot of a larger size. It is true that small shot move with equal velocity through the barrel; but the distance they are thrown to, and the force they carry with them, are very different. Once released from the muzzle of the barrel, they meet with resistant forces from the air in proportion to their surfaces in the aggregate; and thus the retarding forces (which may be calculated from a comparison of the resistance with the quantity of matter to be moved) will be exactly in the inverse proportion of the diameter of the different sized shot employed. It is hence explained why a musket ball of an ounce weight, fired with one-sixth of its weight of powder, will range nearly twice as far as a pellet weighing but one-eighth of an ounce fired with the same proportions of powder. We hope we have proved, therefore to the conviction of the sportsman, that the partiality which some profess for small shot is founded in error, particularly when directed against any object

beyond twenty or twenty-five yards. Mr. Greener, for whose opinion we have much respect in most cases, is one of those who incline to the use of small shot. Some new rifle balls, of a conical shape, invented by Mr. Westley Richards, are sold by his agent, Mr. Bishop, of Bond-street. These conical balls, it is said, may be sent half as far again as an ordinary rifle ball, under the same charge of powder; but it is necessary that they should be accurately fitted to the rifle intended for their discharge. Some practice with them is also requisite.

2433. *To prevent the scattering of shot*, Espinar recommended widening or relieving the muzzle of the barrel. In some of the old guns this bell-muzzle almost approached to the figure of a post-boy's horn, and was therefore calculated to offer an incipient divergence of the shot ere they had escaped from the barrel. To this day we find a very slight relief recommended by some excellent shots and experimenters, as Colonel Hawker for instance. We have registered our opinion in favour of a cylindrical bore, but we at the same time think, the relieved muzzle a very harmless error (if it be one), provided it does not *sensibly* enlarge the diameter of the piece; but when it does this, we should decidedly object to it, being convinced, that so far from preventing a scattering of the shot, we know no better method of furthering it than by thus encouraging their diverging direction from the very outset. It is thus that the patent cartridges are well adapted to increase the range and prevent the early dispersion of shot. There are also other methods practised, of producing an adherence of the shot in their range, by mixing oil and water with them, and by introducing tow likewise. Heavy charges of both powder and shot (but of powder particularly) are great causes of the scattering of the shot; indeed we believe this to be the most general cause of all, and yet the ardent gunner of a certain stamp feeds his gun as he would himself, by a belly-full. A heavy charge of both powder and shot occasions unpleasant recoil: nor ought we to forget the danger incurred thereby. It is our duty to give this hint, though there are too many who will not be persuaded to accept it until too late.

2434. *As a determinate range*, forty yards is more used than any other in the sportsman's vocabulary. Forty yards certainly constitutes a fair average of the capabilities of a gun to bring down its game with moderate certainty. A few will kill considerably farther, and many more are only certain at somewhat less. Mr. Daniel with truth observes, that "There are few things in which persons have more faith than in the excellence of their own gun; the distance it kills, and the closeness of its throwing the shot, are inconceivable; striking a card with ten or twenty grains of shot at sixty yards is nothing uncommon; and the merits of the shooter and his gun bid defiance to rivalry. It is no easy matter to change the opinion of such persons respecting their guns; but when a gun is said to be *sure* at three or fourscore yards, the measure may be safely asserted to be of the proprietor's own making. The circumstance of knocking down a partridge at eighty yards may happen, but very few barrels of those that are generally used for the shooting birds on wing, will throw shot compact enough to be certain of killing at fifty yards: one or two grains of shot are not sufficient so to strike a bird as to bring it to the ground, for, when stript of its feathers, a partridge is a much smaller object than it appears to be, and possesses many parts not vital. Those who expect light barrels of three feet, or three-feet-six, to throw shot close enough to insure a small object at fifty or sixty yards, will be exceedingly mistaken." (*Rural Sports*, vol. iii. p. 476.) On the faith of our own observations we venture to assert, that, from twenty-five to thirty yards is the average range at which birds are killed with certainty. Many are killed at forty also, and some at fifty, and occasionally one is brought down, by a random shot, considerably farther. A hare is not a certain prize beyond thirty yards, though many are killed at much greater distances. We have, we believe, already stated, that we killed one in the middle of a hard road at full eighty yards of our stepping. It is probable that some shot which, having struck the stony surface, by bounding off again reached the hare; in no other way can we account for this extraordinary shot, the intermediate portions between our standing and that which the hare was shot upon having been seen by several of our acquaintance.

2435. *The recoil of a gun* is inseparable from a discharge of its contents, on the broad principle that action begets reaction. It is, therefore, only when the "kick," as it is called, becomes painful, that it is essential to avoid or lessen it. Inequality in the bore of the barrel is a very common source of violent recoil. Contracted breeches also, but more than all, the contraction of the barrel at its centre, occasions recoil, and that of the most dangerous kind. The expanding flame, during its ignition, presses violently to make its way through the contracted to the wider part. Now, action and re-action being equal, it follows that the weight of the piece being the same, the recoil will be in proportion to the quantity of the powder, and the weight of the ball or shot; and that, with the same charge, the recoil will be in proportion to the weight of the piece; or, the lighter the piece, the greater the recoil." (*Essay on Shooting*, p. 64.) Could we entirely obviate all recoil from a gun, we should not only remove an unpleasant shock to our persons, but, there is reason to believe, we should much assist the range and force of the shot likewise, although there is an opinion prevalent that the degree of the recoil is in the proportion of the projectile force.

On this, however, some doubts are entertained, which are somewhat warranted by the following fact: — Mortars, with iron beds, immovably fixed in the earth, throw their shot to greater distances than guns can do which are affixed to carriages, and which, therefore, can recoil. This has been incontestably proved both in large and small artillery. Having suspended a gun-barrel, charged with a determinate quantity of shot, from the ceiling by two cords, so as to allow of its recoil, fire it point-blank at a target, and mark the result accurately. Now, fix the same barrel to a block, and charge it exactly with a similar charge; then, having moved the target fifteen feet farther, fire the barrel, when it is probable that the last shot, though at this increased distance, will exceed the former both in range and force. These, and such-like experiments, are laughed at by the giddy and inconsiderate; but it is by these illustrations that the most important facts are brought to light. Projectile force is, therefore, to be increased by resistance; and the knowledge of this fact offers us a practical hint that, when we stand immovably to our shot, not only by holding the gun tightly to our shoulder, but also by leaning somewhat forward in our shooting attitude, we considerably increase the resistance, and consequently we not only lessen the shock of the recoil to ourselves, but we aid the force of the shot, and extend its range. That such is the case, may be further exemplified by the following: — Throw a ball against any movable body, and it will displace that body; but the ball will drop to the ground perpendicularly, however hard the body against which it is thrown may be. Fix the same body securely, and then the rebound of the ball will be nearly equal to the force with which it had been thrown.

2436. *A straight stock increases recoil*; one more bent carries off much of the shock, by directing its force obliquely. Bad powder increases recoil, by delaying the liberation of the shot. A foul gun recoils by increasing friction, which, being an indisputable fact, it may be asked of the advocates for friction thereby to increase the force and quickness of the discharge, how it happens that the fouler the gun is by so much the worse it shoots? Our own reply would be, that the fouling matter, like bad powder, impairs the ready and perfect ignition of the charge, by a noxious moisture being absorbed by the feculæ on its sides. Thus, old practitioners with much judgment recommend to charge the gun as quickly as possible after firing. Here, also, we take the opportunity of advising the use of such wadding for a gun which fouls much, as will by its substance remove the fouling, and also by its elasticity will shut out the air from penetrating to the charge, particularly to the powder. It is here that we think an objection might be raised to the vent-holes of the percussion-locks, inasmuch as they must permit the access of atmospheric air to the powder; whereas, did we allow the escape of any rarefied air by means of a puncture in the powder wadding, no such injury need be feared; as the shot wadding, being unpunctured, would keep the charge from deterioration by the access of air. We only throw out these hints for experimenters to cogitate and work upon.

2437. *Has the form and placing of the touch-hole any effect on the recoil of a gun?* Some, when the touch-hole is so placed as to be considerably in advance of the bed of the powder (be it within or without the breech plug), so that the powder being ignited, not from the base of the mass, but from the centre, exerts its force backwards rather than forwards at the instant of ignition, hold, that, acting thus, it must tend to increase recoil by expending its force on the breech, more than on the sides of the barrel or the shot bed at the instant of ignition. This effect is, however, denied by others; but, notwithstanding the experiments of Monsieur Le Clerk to prove the contrary, we are inclined to believe it to be a very usual cause of recoil; and the more so as, under our direction, the gun of a friend, which he said kicked like a d—l, was very much amended by putting in a deeper breech plug.

2438. *Bursting of gun-barrels.* How is it that barrels with the full proof-marks upon them occasionally burst, in the absence of all those causes that are commonly considered as liable to produce such accidents? The more common causes of bursting, besides overloading the piece, is allowing its mouth to become accidentally stopped up with either clay or snow; and although it occupy only an inch or two of the muzzle, it will also do the same, should it be attempted to be fired when its muzzle is held in water to the depth of two inches only. The inexperienced and fool-hardy disbelieving these to them inexplicable phenomena, have, however, some of them had proofs of the fatal truth, when they have made the experiment. Even with a very moderate charge of powder, as soon as the expanding forces reach the obstruction, the velocity acquired will occasion an enormous and sudden condensation behind the obstructing medium, which, though it may be by no means great, yet will not be removed by the force of the powder superior as it is; but, on the contrary, by acting suddenly on the sides of the barrel, instead of the obstructing matter, it instantly tears them open. Thus, when a ramrod has been left in a gun after loading, although only the slightest adherence existed between it and the sides of the barrel, and with nothing more than the powder and wadding beyond it, in such a case, should the gun accidentally explode, the sudden expansion of the ignited powder will not stop to eject these seeming trifling obstructions; but, like a man in a passion, will burst through a window, because

the door is not big enough for him. Such are the contradictions in the phenomena attending explosive substances; the principles of action of which are only moderately understood even by those most conversant with projectiles; and thus it happens that so many lives are foolishly sacrificed every year by the ignorant and by the presumptuous.

2439. *The proof-mark*, it remains to be noticed, is not always a sufficient warranty of the safety of a gun-barrel under only a fair charge even; for it appears from Mr. Greener, that it is the custom with some gun-makers to prove their barrels in a rough state; in which case, should they burst, the expense of finishing is saved. Such as stand are said to be filed and trimmed down with a loss of nearly a pound in substance; and it may happen that much of that substance is abstracted from the breech (some of it must be), in which case, provided the barrel is intended for the percussion principle, the risk is the greater. This is one of the reasons which has prompted us to recommend another proving under the owner's own eye; and if it were done by *waterproof*, it would be still more satisfactory. (See *Proving*, p. 734.) It is only to the mere tyro, we presume, that we need offer any caution on the danger of bursting from an overcharge; we might add a monstrous one, for even a heavy charge will seldom affect a really good gun; but when, by heedlessness, the whole of an additional charge has been put on another, there is extreme danger, though bursting is not the inevitable consequence even then. We have known this happen more than once, when extreme anxiety to secure his prey has put the caution of the young gunner so to flight, that he has charged one barrel a second time. A young friend of our own had done this twice, and each time measured his length on the ground. Luckily he had been taught to charge very lightly, and his gun was one of the best, or the consequences might have been serious indeed. Some guns will burst with only a very slight windage left between the powder and shot; but this also can only happen by extreme incaution; for the ramrod in the hand of the experienced gunner will give the gauge of his charge to the eighth of an inch; but, as it has happened, it is well to keep in mind the necessity of being aware that the powder, though lightly passed down, and as lightly wadded, is good practice; yet, that it should nevertheless fill the caliber evenly. The shot likewise, provided the elastic felt wadding be used, requires no hard ramming down, not even in charging the reserved barrel of the double gun.

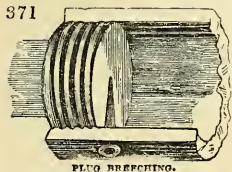
2440. *Imperfect boring*, bad welding, and flaws in the gun-metal, are all causes of bursting, particularly the former; but these imperfections mostly occur in inferior guns, which is an additional reason that the purchaser should be careful from whence he furnishes himself with so important an implement. In such guns, from want of care in the boring and finishing off, some parts of the caliber are very apt to be left of unequal thickness in its sides. "This," says the author of the essay on *Shooting*, "is very common in low priced barrels; and as pieces more frequently burst from it than from the other defects, it ought to be particularly guarded against. The elastic fluid which is set loose by the inflammation of the powder, and which endeavours to expand itself equally in every direction, being repelled by the stronger parts, acts with additional force against the weaker ones, and frequently bursts its way through them; which would not have been the case, had the sides been of the same thickness and strength, and not afforded an unequal repercussion." (P. 59.)

2241. *Inattention to the state of the charge* of the second barrel of the double gun after repeated firing off of the left, or whichever barrel it is that the gunner is most used to discharge, is another cause of bursting; for where birds are scarce, it may happen that an opportunity of firing the second barrel may not offer for hours even. In such case, unless the wadding be of a very elastic nature, the jar of the discharges from the first will have the effect of loosening that in the other barrel. If this has not been attended to, and an examination has not been made into the state of the charge every now and then, it is not improbable that, when fired, this barrel will also burst. To prevent the possibility of this occurring, the prudent sportsman would do well, whenever he charges the fired barrel, to put the ramrod down the charged barrel likewise, and then all danger is obviated. Be careful, however, not to put the ramrod down the charged barrel until the other has been finished loading, to prevent the possibility of some of the shot accidentally going down it and obstructing the return of the ramrod. Should such a circumstance occur, by no means attempt to draw up the ramrod, but reverse the gun, and let the shot run out; but, while so doing, see that the ramrod is kept still, that jamming with the shot may be avoided. We must however remark, that where a thick elastic wadding is used, it is seldom that the charge will loosen, particularly if the gun be squibbed at setting off, or has been once fired off in the field. We cannot help again reverting, not to a general want of substance throughout the sides of barrels, as being the usual cause of bursting; on the contrary, we repeat that some very thin barrels carry their charge, although a heavy one, with equal safety and absence of recoil: but we would allude particularly to the *inequality* of the thickness of the metal of the sides of the barrel as a more frequent cause of its bursting, than even its being originally thin throughout; or even having been filed so, provided such filing was performed by a good workman. In the forging of a barrel, if the sides do not present from the foundry even a uniform caliber, the explosive force acting on the weaker and more expanded portion in the radii of a circle, necessarily exerts itself most injuriously.

SUBJECT. 2. *Of Gun Breechings, &c.*

2442. *The gun breeching*, like every other part of the machine, has undergone vast alteration, and certainly imparted much improvement to the art of shooting. Our marginal cut, (*fig. 371.*), will introduce to the reader's notice the old plug breeching, which many of the old school assert was as good, if not better, than any one of those which followed it. We need not inform our readers, that the olden method of breeching guns was nothing more than screwing a plug into the barrel as far as the touch-hole, and if any part of its construction made it efficient, it was its reaching exactly to the touch-hole. It cannot, however, escape the sagacity of the inspector of this breech, that it presents no hindrance to the violence of the heedless sportsman, who rams the wadding of his powder and shot with equal force, by which

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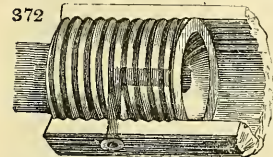


PLUG BREECHING.

much of it becomes crushed, and the rest, if not crushed in its grains, is yet combined into a hard mass that defies speedy ignition; and in such case, if the gun does not miss fire, a heavy drawling inflammation is the consequence, sufficient to allow the bird either to get out of range, or otherwise to escape, by baulking the shooter in his aim. Only let a full charge of powder be thus ramrodded down, and then fired over a sheet of white paper, or of bed linen, or over the snow, and it is ten to one but nearly as many grains of powder will be ejected out of the muzzle unburnt as were ignited.

2443. *The chamber plug* (*fig. 372.*) formed the first important improvement, by which the evil consequences we have stated were in some measure avoided, and misfires prevented from occurring so frequently. By the use of this plug the powder is but little compressed, or crushed to dust by the force of the ramrod or the hardness of the wadding; for a portion of it would reach no farther than the end of the rim of the chamber. Instantaneous ignition of the powder, however, was still liable to receive a check, and there was something still wanting to secure to the body of the powder a more immediate connection with the priming, as we shall see anon. *Fig. 372.* represents the chambered

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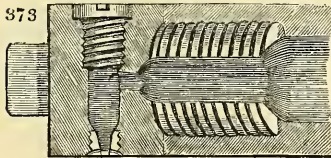


CHAMBER PLUG.

plug, where a hollow drain or antechamber is seen communicating with the touch-hole by a gutter, which runs at right angles with it. The length of these passages, however, must somewhat tend to delay the inflammation of the powder; and further, they are apt to become injured by wear also. We will not dwell longer on this plug, but when we have placed all the alleged improvements before the gunner, he may then judge for himself.

2444. *Nock's solid breeching* (*fig. 373.*), known in common parlance as Nock's original patent breeching, formed the next important addition to the gun; and it will stand

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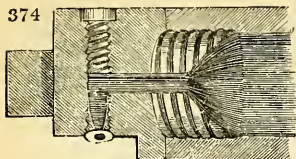


NOCK'S SOLID BREECHING.

as a monument to his judgment and ingenuity as long as guns are prizable articles; for, as Colonel Hawker justly observes, this laid the foundation of most of those important improvements in gun-barrels which have since appeared. Mr. Greener also does Nock justice when he says, that he "must have had in view the quickness of ignition and the generating of a greater strength of explosive power than was usually produced in the common breeched

gun, by preventing the compression of the powder by the wadding, for the breech containing the whole charge, and being less in diameter than the barrel when the wadding is rammed down, it could be driven no farther than the end of the breech; so that, when the fire was communicated to the touch-hole, the charge would ignite almost instantaneously; I say almost, because it is not possible to ignite above a certain quantity of powder in a certain space; for, as soon as one-quarter is changed by the explosion into the state of a gaseous fluid, so great is its elasticity, that it instantaneously fills all the space left, and the remaining portion of the unexplored powder is compressed into a body." (P. 109.) The solid breeching certainly did effect this in a considerable degree as at first made, although it still left room for further improvement by its want of a sufficiently expansive cavity of powder chamber, and also by the great length of communication and irregularity of the limits of the line between that and the touch-hole. The section of Nock's breeching (*fig. 373.*) presents the breech screw as adapted to the breech of the barrel; the powder chamber is seen communicating by a contracted portion with the antechamber; the screw opposed to the antechamber points to the touch-hole. It is much in favour of this gun, that so good a judge as Mr. Baker should say of it, that it is an invention that has never been surpassed; and indeed, if we consider the amount of improvement made at that one step, and were to exclude all that has been added since, we also should agree fully with Mr. Baker.

2445. Mr. Joseph Manton's breeching (fig. 374.) followed that of Mr. Nock; and as his advertisement of its merits is admitted to present a faithful picture of the same, we will give it as it stands; except that we shall take, what some might call an Irish liberty with the placard, and give the last first. "Mr. Manton's improvement to double guns (our illustration is on a single gun) consists in placing two sound barrels together, which gives them all the solidity at the breech that is needful, and which entirely removes the danger without widening the locks; nor has there been, it is said, an instance of one of these guns bursting." "The advantages derived from this improved breeching are, that the whole charge of



powder is exploded; consequently guns on this principle shoot much stronger, and will fire oftener without cleaning than any other. The locks of a double gun are also brought nearer together, by which the cocking of the left lock is rendered more convenient. In cleaning the barrel, the rod goes down to the bottom of the breech; and in wiping it dry, forces the air through the tube in the centre with such violence, that no damp or oil can be left behind. The common mode of joining double barrels is to file half the substance of each barrel away in the middle, so that the partition between the two barrels is only half the substance of one barrel, and is soldered together with grain tin and lead; it is therefore no wonder so many double guns burst." Fig. 374. presents an outline of this breech, the letters of reference being the same with the last, we shall not repeat them here. Manton's breech, we may remark, is particularly adapted to the flint-gun, by its tendency to prevent the explosive gas from escaping by the touch-hole: in the percussion-gun, this escape is prevented by the peculiar construction of the cock. A very important improvement in Manton's gun was the removal of useless matter towards the breech, by which the lock was brought much nearer to the centre of the breech. That which most detracts from the merit of this breeching, we conceive to be the length and contraction of the antechamber, and its acute flexure to arrive at the touch-hole, both of which must retard that instantaneous ignition of the powder which it was principally intended to assist. Nevertheless, the principle has been adopted by many of our best gun-makers, and is much approved of by scientific and observant sportsmen. Mr. Manton's celebrity has been great, and we know how much it is the fashion to be influenced by the representations of a popular artist, to such a degree as to prevent our own critical examination of the matter in all its bearings. Few can estimate Mr. Joseph Manton's abilities more than ourselves; we knew him personally, and we know that his exertions to improve the machinery of fire-arms were great, and in most instances successful; insomuch that they were, after an unsuccessful opposition, adopted by other excellent gun-makers. Nevertheless, it is neither to be supposed that they were perfect, nor that they left no room for further improvement. The noontide glare of the sun, how glorious it is! and yet we cannot pronounce the face of that great luminary spotless; for the critical observer, by mechanical aids, discovers that it presents dark spots. Mr. Daniel and Colonel Hawker, both practical sportsmen and observant judges, are certainly very warm in their advocacy of Manton's improvements, and with great reason. No one of that day, Nock excepted, ever did so much for the fowling-piece: but we must not be led thereby: nor is it asked of us to suppose, that his additions have left no room for further valuable additions to this favourite article in sporting; we fortunately have abundant proof to the contrary. Nevertheless, both the excellent sporting judges we have alluded to have been somewhat ridiculed for their warmth in advocating the value of Mr. J. Manton's alterations; but allowing that these alterations are not without defects, they have unquestionably proved very important in their effects on the art of shooting flying; and had he never done more than invent his breech and his elevated rib, his name would have been associated with the fowling-piece as long as a fowl remained to be killed by it. Neither can we but hold in respect the warmth of the eulogy bestowed on this star in gunnery; and therefore, with all our respect for Mr. Greener, as an able commentator on the gun in all its parts and appliances, both practical and theoretical, we cannot but consider him as too much prejudiced against Mr. Manton's breeching; which, if it did not go the full length of all that was wanted, it nevertheless pointed out the road thereto. Bringing the locks nearer together without risking the safety of the barrel, we again repeat, was unquestionably a great improvement of the double gun.

2446. Mr. Grierson's patent breech also deserves notice and approbation. His placard tells us, that "The principle of this new-invented breech and lock for single barreled guns, pistols, and other fire-arms, is, that it has quicker and more perfect communication from the pan to the charge in the centre of the barrel, than any other construction, operates with the greatest velocity, is not so liable to hang fire, and is much easier cleaned. This invention is also of the greatest utility to the stock, by strengthening the weakest part, and besides admits the locks of a double gun nearer together, by which means the left lock is cocked with greater facility. This breech can be put to any well made gun, and the lock be

altered to fit." We certainly think this breech may be considered to be an improvement on that of Mr. Manton's, inasmuch as it remedies many of the defects we have noticed in that. Nor could Colonel Hawker's acumen be otherwise than favourable to it, and thus we find that he considers it to come the nearest of any to the meritorious solid breeching of Mr. Grierson's relation, Mr. Nock, senior. We think, however, that it did much more; for it shortened the antechamber by cutting off the acute angle of junction between it and the portion that meets the touch-hole. Colonel Hawker's opinion is, that this breech would have approached still nearer to perfection, had the centre hole or chamber been as narrow as that of Mr. Manton's; which form, the colonel considers, has the effect of a more rapid ignition of the body of the powder charge. Much as we are disposed to coincide with most of the opinions of this truly ingenious writer, we have some doubts of the propriety of this forcible penning up of the first expansive effort of the gas; we would, on the contrary, rather widen its track, and shorten its road to the shot, on which its first expansive efforts should be spent, and not on the breech part of the gun; for this in our opinion rather tends to propel the gun backwards and increase the recoil, than expand forwards and expend its strength in ejecting the shot. We would warmly advocate every attempt at real improvement in gunnery; but it might be well to inquire whether, in carrying on our experiments to an inordinate length, we may not also increase, to an inordinate degree, the noise and painful recoil which we experience on firing the detonator, and thereby defeat the other general purposes to which they were intended to apply? For we may be assured, after all, that to the majority of steady sportsmen ease and safety are essential towards a continuance of their practice. We are not now alluding to the increased force with which the detonator acts; for the principles here laid down were maintained before the percussion-gun became universally employed.

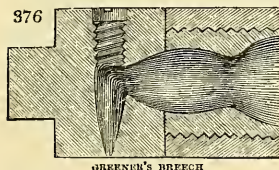
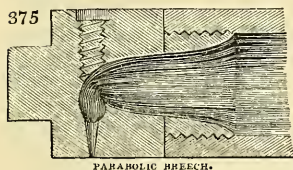
2447. *Mr. Wilkinson's parabolic breeching (fig. 375.)*, on the principles we advocate, is certainly favourable to a ready and uninterrupted ignition of the powder. It has been wittily called the jack-boot breech by Colonel Hawker; and we cannot but admire the proportions of the swelling calf, which are not injured by a tightened garter below the knee, after the servant-maid fashion. Here we think the colonel shines, by giving an unbiassed, yet critical opinion on it, exactly adapted to its merits, which, though considerable, yet, under the views he is known to take of this subject, he can only allow to be experimental. The retardation of the too sudden ignition

of the powder is here much moderated, on which the colonel observes that experience will best show whether this, or opening the barrels behind, is the best mode of gaining strength by retardation.

2448. *Mr. Greener's improved breech (fig. 376.)*, from what has been said of the last, may be supposed to meet our views in many, if not in all respects. It is simple; it also facilitates ignition, as well as a rapid and forcible ejection of the shot. Mr. Greener professes to offer it merely as a slight improvement of the original patent breech, which he thinks was discarded without any good reason; and, on the contrary, he observes:—"The only faults I can find in the construction of the original patent breeching are, first, that the avenue (as in the parabolic breech), through which the powder has to pass, is smaller than the antechamber in which it lies; secondly, I object to the uniformity of diameter in its chamber from the bottom, which is a half round, to the top, on which the wadding lies. In my opinion it would be an improvement, if it were made gradually to increase in dimension from the point where the powder is first ignited, to that part where the breech joins the barrel inside, somewhat in the manner depicted in the cut," *i. e.* in the figure of his own breech (*fig. 376.*), by which the reader will readily enter into the intentions introduced to our notice by Mr. Greener's figure of his improved breech, as purposely formed to increase the diameter of the avenue through which the powder has to pass to the antechamber, which we greatly approve of.

2449. *The false breech*, we need not inform even the tyro is that metal rim which is screwed into the stock, presenting a cavity proportioned to the projection or "butt" of the breech of the gun. The false breech should be well fitted into the stock, but, more particularly, its surface should so fit the breech surface of the gun, as to afford it a steady support, by which recoil is lessened, and yet a resistance favourable to the shooting of the gun is increased.

2450. *The touch-hole of a gun* (we now allude to the flint-gun) has occasioned as much difference of opinion as regards its form, situation, and dimensions, as almost any other part of the piece; some having advocated its being made large enough to prime itself, without remembering that the opening which would allow the powder of the barrel to escape into



the pan, would also let out a double or treble quantity of explosive gas, and thus greatly injure the shooting force of the gun. The touch-hole we approve of should be rather larger in dimensions towards the pan than towards the barrel, in the proportions of one-sixteenth of an inch to one-eighth. This conical form would allow of a few fine grains of powder to enter the touch-hole, and serve at once to preserve the charge within, and to conduct the ignited gas inwards also. A steel touch-hole rusts, a gold one often becomes loose, and therefore flint-guns are now very frequently fitted up with platina touch-holes, which, in a great measure, obviate all these inconveniences. The touch-holes of our best made guns are counter-sunk, and for the convenience of inserting them, the solid breechings are perforated directly opposite. This perforation, after the touch-hole has been inserted, is filled up by a screw. (See figures of breechings, p. 747—749.)

SECT. IV. *Of Gun-locks generally.*

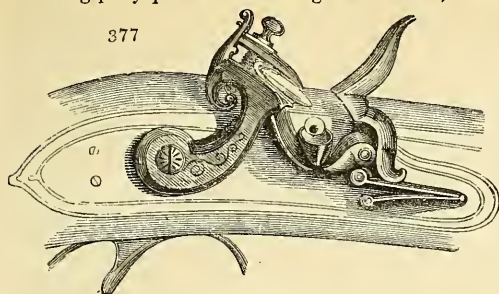
2451. *The gun-lock*, in importance, is scarcely inferior to the gun-barrel; and however foreigners may boast of the superiority of the Damascus and Spanish barrels, we believe they will not venture to compete with us in the manufacture of gun-locks, which, under our superior artists, have undergone more important modifications than the barrel even. How vast the difference between ignition drawn from a common match, or that ground by rotation of flint and steel, to the smooth workings of the machinery, and magical production of fire by a modern gun-lock.

2452. *The first spring-locks*, it is said, were made in Nuremberg, in the beginning of the sixteenth century; and could the early makers see to what perfection they have been brought, they would regard them with much amazement. A well finished gun-lock of the present day is, indeed, an elegant toy, and a curious piece of mechanism, particularly when compared with its early types. We have amused ourselves for hours even in taking to pieces and putting one together, and we, like Mr. Greener, have almost as much pleasure in the harmony of the action of the various parts of a well filed lock, as some might experience from a well tuned musical instrument. "To me," says Mr. Greener, "there is a superior music in the tack of the sear on the tumbler and the fine elasticity of the main-springs, moving with a sort of fine oily feel, though light, as sharp as the lightening playing in the heavens." Where is the real sportsman that does not enter into the spirit of this quotation? Mr. Greener also says, "There is a great degree of skill displayed in the making of locks, though to the casual observer it does not appear. On the simple hanging of the swivel depends all the sweetness of the play of the main-spring; and on the placing the hole for the sear-pin depends the sweetness of the sear playing on the tumbler. Many who now pass for excellent workmen would find this a difficult undertaking, simple as it may seem, without a pattern by which to work. All locks for percussion should have the greatest strength of main-spring at the moment they strike the nipple, or what is termed when the lock is down. On the pitching the sear depends the cutting of the bents; and on their formation the danger of the lock catching at half-cock, when the trigger is made to pull easy: but these observations will be understood by a lock-maker better than I can explain them. The quality of all locks depends on the price they cost filing; and without you pay the workman a proper remuneration, you may rely on having them somewhere inferior, or in accordance with the price, which it requires a workman to point out; so that, without a doubt, any person, if not a first-rate judge, is completely resting on the honesty of his workmen." (P. 137.)

SUBJECT. 1. *The Flint-lock.*

2453. *The perfection to which the flint-lock arrived was great*; so great, indeed, that it is not to be wondered at that it should for some time have retained the regards of some of the older sportsmen, who had gradually witnessed the accomplishment of so much perfection of mechanism with so much toy-like elegance of construction. Those who had long been accustomed to shoot with a flint gun could not but look at its fair proportions, and particularly at the internal mechanism of its costly lock or locks, without pleasure, and perhaps complacency, as the force of old habits would for some time at least keep it before their eyes. We remember an excellent old sportsman — one of the best shots in his county — who resolutely adhered to them to the very last, alleging that they were equal to every species of destruction that could be required, and that any improvement was only an advance in the art of unnecessary slaughter. He was one of the good old-fashioned school, who liked to give everything a chance of escape. Even Colonel Hawker, the great instructor and pioneer of improvements in the art of shooting, threw his broad shield over ignition by flint and steel, but his great authority failed to save it from an early doom; and percussion locks, like the once derided railways and the all but incredible electric telegraph, soon asserted their supremacy. Still, with the gratitude due to old and faithful servants, we will not pass by the flint and steel without some record of its merits, and some memorial of its existence, which is very faithfully repre-

sented in the annexed engraving (*fig. 377.*). On this lock we will commence with the following pithy quotation from the gallant Colonel, the flint system's best friend:—"If the



FLINT-LOCK.

main-spring be too strong in proportion to that of the hammer, the cock is often broken for want of resistance; and if the hammer or feather-spring be too stiff, or should shut down with too much force, it becomes difficult to throw it even with a strong main-spring. This is not only, for the reason already mentioned, a sad fault, but the hammer by thus coming down escapes, in a certain degree, from the influence of the spring, and consequently loses its pressure on the pan; by

which the priming is not so closely covered, and the hammer is apt to react, instead of obeying the main-spring; in a word, let your hammer shut down dull, and fly back smart. The main-spring, to be well regulated, should at first pull up very hard, and then draw progressively easier, because it requires an accession of force after it has recovered the first sudden escape from the sear-spring, otherwise it will go slow with a flint, and be liable either to cause a snap, or allow the cock to be blown back with a detonator." (*Loc. cit.* p. 44.) Very strong main-springs must not, however, be used without reference to the harmony necessary to be observed between force and resistance. One admirer of the strong main-spring finding that most of his black flints fly, and that his hammer face requires frequent repair, recommends the use of what he calls a hard white stone. We presume he means chaledony, a siliceous substance, which yields fire, and is therefore cut into gun-flint shapes, and may be obtained from any gunsmith. Some natty sportsmen also use agate (little differing from the former), for the same purpose; but both are likely to wear the face of the hammer more than pure flint; and as they also are apt to fly, although tougher than pure flint, the sportsman should furnish himself with duplicates and triplicates also, as he would with flints. One out of a dozen will, however, sometimes last the space of many days' shooting. The solid cock finds favour in the colonel's eyes, and it certainly has all the advantage he describes; but it is, we think, too clumsy to be used on any lock but that of a duck-gun. As a neutraliser of these inconveniences of breaking cocks and wearing hammers, we would strongly recommend every prudent sportsman to be supplied with an extra cock, hammer, and springs to each of his guns; and that each of such extras be stamped with the number of the gun it belongs to. This precaution is doubly necessary to him who has not a relay of guns, for here the accident of a fractured spring is most serious, particularly in the early part of the season, when the gun-makers are in full employ. As regards a hammer injured by wear, we would hint that the battered face can be repaired without the expense of a new one: it can be refaced by any country gun-maker, although such an one may, to make a seven or ten-shilling job instead of one of half-a-crown, attempt to convince you it cannot be done: it can be done, and easily too. We cannot too strongly enforce attention to the state of the flint-lock in all its parts, but particularly of the cock, the hammer, and the springs, which regulate their action. The temper of the face of the hammer is very important. It must be steelled, and yet apt to receive the impressions of the flint, which in its fall separates some small ferruginous portions, which, if struck with sufficient force, ignite instantaneously with brilliancy, and emit a whizzing sound as they descend to the pan. It is not, therefore, the flint that yields the fire, but its sudden collision with the steel that produces it by occasioning combustion in the small particles of steel which become detached. Thus, if a gun or pistol have its priming burnt over a sheet of white paper, the steel particles which were separated may be then collected, not in their original state, but in one of semi-vitrification, from the intensity of the heat generated by the sudden and violent collision of these media. By this the several phenomena produced by collision between flint and steel are explained. The iron particles separated from the soft hammer are too large to be properly ignited, and those from one that is too hard are too small to remain sufficiently heated to explode the priming. It must be therefore a particular state of tempering of the hammer that best answers for the ready ignition of the priming. Concentration of the fire sparks is a great object; they may fall in a slanting direction, unfavourable to ignition, or by their disgregation prove inert. They should fall directly over the priming.

2454. *The hammer* of some gun-lock-makers slides over a wheel in the feather-spring, and of others the wheel is placed in the hammer, and runs over a bridge on the spring. We ourselves prefer the latter plan, patronised and recommended by Manton, because it assists in raising the hammer above the danger of interfering with the course of the sparks into the pan, the principal object of which is to prevent misfires. "The part next the touch-hole is

hollowed out and perforated with a small hole, so as to let the air pass through, but not the powder. The seat of the hammer is also grooved out from the perforation to the edge, so as to let the air, but not the powder, out of the pan." By this improvement the powder in the barrel, by the air being allowed to pass, is forced into the perforated receiver, so that the touch-hole is always full of powder, by which means the flashing or hanging fire is prevented.

2455. *The pan* also must be looked to with regard to its form, situation, and inclination. It should present a cuplike figure, rather elongated, and of such depth as to contain the requisite priming without compressing it. In situation it should be rather below the touch-hole, for if it be on a level with it, the charge does not receive its ignition so quickly from the burnt priming as when it rises to it. The pan should be a dead level, and in close contact with the barrel. An improvement in the pan, originating with the Mantons, and now used by most of our best gun-makers, intended to keep the powder dry, and prevent misfires, consists in the passing a current of air through the priming without displacing it. Mr. Egg, we believe, is very favourable to this addition to the pan, and he is said to shine much in his method of manufacturing it.

2456. *The trigger* equally requires attention; particularly it is necessary that the triggers of every gun the sportsman possesses, should act by the same quantum of pressure. If such be not the case, and supposing that a careless person after firing a week with a gun, the trigger of which was very fine, was to go out with one which required a strong pull, it is ten to one but he would, after raising the gun to his shoulder, being impressed with a belief it was on half cock only, take it down again, and thus lose his shot, as we have ourselves several times seen done. On the other hand, when a person used to a hard pulling trigger, attempts to shoot with a soft one, he is liable to fire his piece before he has levelled it with his game. In the best guns the triggers not only are gauged to a certain resistance, but are also kept in their proper situation by small springs, which require to be moved when the lock is in action.

2457. *Gun-flints*, we hardly need observe, are comparatively now little in request. They are procured in many localities where chalk abounds, and are collected in solid lumps, from which they are broken, or rather shivered, into shape from these larger masses. As a matter of trade the supply is principally derived from Wiltshire and Norfolk. Those which are black being most esteemed, as proving the most cohesive. When putting a flint to the gun-lock, place it with the flat side uppermost, between a fold of leather; and if it be wished that the flint should strike the hammer lower, reverse this placing of the flint, but if it be desirable that it should meet a still higher part of the hammer, place a double piece of leather underneath it.

SECT. V. *The Percussion or Detonating System of Gun Firing.*

2458. *Percussion versus flint*, was a cause some time before the public, and had the magazine lock remained attached to the percussion gun the cause might have remained undecided to this day; but time, which trieth triggers as well as truth, has established the superiority of the percussion principle over that of flint and steel. Indeed, a gun with a flint and steel lock has become quite a rarity, seldom seen but in the rafters of farm kitchens, or in the hands of boys frightening crows. No poacher would condescend to use one. Still, percussion locks had strenuous professional opponents in the first instance. Mr. Baker, a gunmaker of repute residing in Whitechapel, who wrote an ingenious treatise on the rifle, of which he was a famous maker, was one of its most ardent opponents. Indeed, a long patent guarding its interests, most of the gunmakers were opposed to it, and every exertion was made to bring the percussion principle into disrepute. Colonel Hawker, as we said before, was early in the field, and never, we believe, became very cordially attached to detonators. Be it understood, however, that we are not prepared to deny but that some of his early objections had much force. We believe, however, that before his death Colonel Hawker had adopted the use of detonators in his own sporting. Mr. Baker also admits the superior force with which the shot is thrown by the percussion-gun, and yet he asserts his conviction, that more execution will be done at an equal distance by the flint-gun. We cannot, by any method of ratiocination, distinguish rapidity of ignition of the powder from force generated by the gaseous expansion, which appears in the percussion principle of ignition to be so intense as to require a stronger barrel than that heretofore necessary. This being premised, we ask, Will not the forcible disturbance of the shot, and their hasty ejection from the barrel, be in proportion to the rapidity of ignition? and will not the same force propel them both quicker and farther than from the gun on the flint principle? Nevertheless, to this time there are intelligent sportsmen (and among them was Colonel Hawker), who believe and assert also their conviction, that flint-guns shoot stronger than those on the percussion principle. Mr. Greener, in his work on the gun, from experiments made by him, is able positively to deny that the rapidity of the ignition by the percussion principle tends to drive the powder out of the barrel unburnt, as the opponents of the principle assert. The experiments he has made have brought him to the following conclusions, which will assist a little to harmonise these very variable opinions; and although they leave the flint-gun

far in the rear, yet they exonerate the dissentients from the tax of frivolous opposition. "I found," he says, "that with moderate charges the percussion gave the greatest range; but when the charge was increased to extreme, the flint-gun gave eleven yards farther on the average. From these experiments I came to the conclusion, that where the charges were less than either could burn, the percussion was undoubtedly better than the flint; but if the charges were more than either could consume, the flint was better than the percussion. The reason is this:—when the charge is small, a tenth part of the flint-gun's charge escapes through the touch-hole, and, consequently, she cannot have the strength the percussion-gun has, where there is no escape for the explosive matter. There is, however, no question when the charge is larger than either can burn; the flint-gun has the advantage from the greater length of time her charge remains in confinement, and which, consequently, secures the burning of a greater quantity of powder." (P. 126.) Again: "In a flint-gun, when the powder is ignited, it keeps rushing out of the touch-hole, there being no hinderance that way; and the train, as we may term it, has to keep burning, until a much greater degree of force is generated than can escape through that vent, or a sufficient power is created to move the body of the charge. In the percussion-gun, as soon as the fire is communicated, the touch-hole is partially closed, and an obstacle presented to the escape of the powder that way; so that a force equal to move the charge is generated in one half the time. It is this circumstance that constitutes the difference between the flint and the percussion-gun." (*Loc. cit.* p. 127.) Again, alluding to Colonel Hawker's opinion on the percussion system, we are happy to observe that he is gradually rounding the point, and admitting some of the excellences of this system, and some of the valuable properties it possesses over the flint ignition. In the latter editions of his work, after canvassing with candour the pros and cons, he nevertheless, to use his own words, "still maintains that the detonator has not the power of the flint-gun; and yet (he says) I admit, that, by a different mode of boring, the percussion-guns are now wonderfully improved, insomuch as to be almost equal in strength to the flint-guns. Nay, I will say even more: give them an increased weight of metal, which to many is a trouble to carry; retard the charge, and thus increase the recoil; and then I admit, with the very great improvement that has lately been made in barrels, they will, no doubt, even beat those flint-guns which were manufactured a few years ago; but, without all this, they would be found as inferior as ever to flint-guns." (P. 94.) As regards ourselves, the superiority of the percussion principle in almost every point of view is, we believe, unquestionable; and the same feeling appears to us to pervade the minds of the majority of sportsmen. The recoil of the percussion-gun is complained of by some, and its sudden and sharp report by others; but its quickness of ignition amply repays these by its certainty in snap shots. With the flint-gun these shots are often lost, for the cock has first to strike the hammer, and to elicit sparks therefrom. In the next place, these sparks having fallen on the powder, ignite it quicker or slower according to its quality, its dryness or moisture, and whether it is free or impacted together by pressure from the hammer. In appearance the percussion certainly surpasses the flint-gun, particularly in the simplicity of its lock, which is freed from those troublesome appendages, the hammer, hammer-spring, and pan (each of which increases its expense), the complexity of structure, and the liability of the lock to be out of order. It being so nearly waterproof also gives it a great advantage over the flint-lock; neither are the few misfires which occur with this, in proportion to those which happen to the other, trifles in the scale. We will now, while it is present to our memory, warn the unwary against incurring the danger which results from having a flint-gun altered to the percussion system; for unless the gun so altered be one of unusual substance, and perfectly sound also, it is most imprudent to attempt it. The force exerted by the rapid ignition of powder by detonation is too great for the resistance which any but the stoutest barrels used for flint-guns can bear. It may be interesting to some sportsmen to be aware, that guns are occasionally made which can be used either as flint or percussion; still, like most things meant to answer two purposes, they are seldom to be relied upon for either.

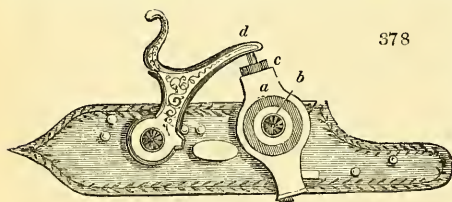
2459. *Experimental trials*, to determine the comparative advantages of the percussion and flint principles, are not wanting to increase our attachment to the former. Among these Mr. Nock's are the most satisfactory, both as regards the source they are derived from, and their results. "The experiment," he tells us, "was made in December last, with two guns, and on three successive days. The guns were on the percussion principle, and made by myself. I first stopped up the nipple or touch-hole, and into the vent-hole I screwed a small pan with a train of gunpowder, in imitation of a flint-gun, and fired my first shot in that way, igniting the powder in the pan with a match. I then put in the nipple, or touch-hole, and fired the second shot with a copper cap; and so changed from one plan to the other alternately." Our limits will not allow us to enter into the full detail, satisfactory as it is: but the average of the result was garnish-flint, 90—4; percussion, 94—6; strength-flint, 23—3; percussion, 26—1. We would, however, particularly refer the reader to the *Sporting Magazine*, vol. xx. New Series, p. 148. where the whole trial is detailed at length in a letter from Mr. Nock himself. Favourable, however, as we are to

the percussion system, our grand object is truth, on which side soever it may be. We have much dependence on the trials of Nock, as we know him personally; and we have no reason to think him otherwise than veracious and unprejudiced. Colonel Hawker's veracity no one can doubt,—nor could he by possibility have any interest in supporting one principle against the other. Consequently, we are puzzled, when we learn the results of his experiments, which were numerous and well conducted, as will appear by a reference to his work on *Shooting*, which we recommend strongly to the reader's notice. As regards these experiments of Colonel Hawker, our limits will only allow us to state that they, most of them, tended to give the superiority of shooting to the flint-gun; but, as we have already observed, the Colonel found it hard to give up an old favourite; and his constancy does him credit; but his evident admissions, of later date, in favour of the detonator, do him much more. In a few years a flint-gun will, we think, be no small curiosity.

SUBJECT. 1. *The Percussion Gun-lock.*

2460. *The early percussion gun-lock*, and the use of percussion powder, to supersede the necessity of using a flint and steel to ignite the priming of the charge, were the invention of the Rev. Mr. Forsyth of Belhelvie; whose advertisement giving out, as it did, that it was to fire without flint, flash, or smoke, raised the expectation of the sporting public to an extraordinary height. It is pointed at as a curious coincidence, that, as we are said to owe the invention of gunpowder to a monk, so also we are indebted to a member of the church for this important addition to our explosives. The magazine of Forsyth, it must be acknowledged, was a most ingenious contrivance; but, unfortunately, it was not only defective in operation, but also complex, expensive, cumbrous, and unsightly. The principle, however, of igniting the powder by means so much more simple than by flint and steel, proved sufficiently attractive to overcome the powerful opposition which interest had raised against it, and at length to bring it so triumphantly through, that now a flint-gun is comparatively rarely seen. The march of the detonator would not even have lingered as long as it did, but that the Forsyth patent did not expire until April, 1821. Then talent having fair scope, one improvement followed another in rapid succession, until the copper cap appeared to crown the whole; and whether we are indebted to Gill as the discoverer, or as the medium only of handing it to us, it is not too much to say that the percussion-gun owes much of its popularity to that source. When, also, the striking point of the cock of the percussion-lock was hollowed out, and the nipple also surrounded by a protecting metallic ring, the last strong hold of the dissentients was lost to them; and indeed until then it could not be denied, but that the detonating lock was dangerous to the eyes of the shooter from small copper particles of the shattered cap striking them, as has occurred.

2461. *The Forsyth, or magazine lock*, with which the percussion principle of ignition was ushered into notice, differed very considerably from that now in use; and we believe that its staunchest friends must allow, that, however ingenious in principle it might be, it was equally cumbrous and unsightly. It was also complex in structure, and uncertain in action, which defects finally carried it to the “tomb of all the Capulets.” *Fig. 378.* presents an outline of the external parts



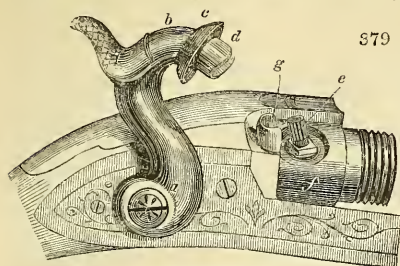
FORSYTH'S LOCK.

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of this lock (*a, b, c, d*): *a* points out its magazine for containing the percussion powder, of which it was to hold about thirty primings; *b*, the roller round which it revolves is screwed into the breech of the gun, and by a small hole permits of a communication between the magazine and the breech chamber of the barrel, for purposes to be explained. This

small hole allows of the passage of the percussion priming powder; and, by the means we have pointed out, it also communicates with a channel which leads to the gunpowder chamber in the breech. The pan which receives the percussion priming is directly above the small hole in the roller, (*c*); *d*, the steel punch, which corresponds with the nipple, or pivot of the improved percussion-lock. This being movable within, and its lower end being directly above the pan, it follows that, when forcibly struck by the cock, or striker (*d*), it instantly ignites the priming, which, by its communication with the barrel, explodes the gunpowder also. The explosion being effected, a spiral spring raises up the punch to its former place. When the striker being raised, and the magazine turned round to a certain extent, again drops into the pan a determinate quantity of percussion powder, and the barrel-charge having been renewed, the gun is again ready to do the sportsman's bidding.

2462. The internal mechanism of the percussion-lock differs but little from that of the flint-lock, figured at p. 751.: we shall not therefore have to enlarge on that part of it. Externally, on the contrary, it is seen (*fig. 379.*), to differ greatly from the flint-lock; for,



PERCUSSION-LOCK.

of aqueous moisture from the atmosphere, without the actual contact of water, would very frequently disappoint the gunner's efforts.

2463. The pivot or nipple is made either plain, or is encircled with small rings, to prevent the cap from falling off but when the caps are properly made they will, in most instances, prove sufficiently secure, without any ringing or roughing of the nipple. The pivot (e) is seen in *fig. 379.* screwed into the patent breech (f), and is perforated by a small hole, over which the copper cap is placed. This pivot-hole, though minute above, should increase somewhat in diameter as it extends downward, otherwise it will be apt to become choked by rust. The square base of the pivot allows of its being unscrewed by means of a small wrench, for the purpose of cleaning and oiling, to prevent corrosion from the oxygen gas emitted by the firing. In the cut the nipple is seen to slope towards the striker (d); but in many locks it is perpendicularly set: it matters little, however, which way it is directed, so that it receives the surface of the cavity in the striker correctly.

2464. Mr. Greener's improved nipple. On the importance of the construction of this part of the gun-lock there can be but one opinion, and therefore we will take this opportunity of introducing to the notice of our readers one that is stated to be so certain in its effect, that a misfire can hardly occur. Mr. Greener's own words are, that "Only half a dozen trials with it will convince us of its superiority over any one of those in common use: the top of the nipple is made with a conical cup, extending a trifling distance down. At the point, the smallest part of the hole is to be found; from thence it keeps gradually expanding inside to the bottom. Around the top a space or margin is left, on which the percussion takes place; all the powder contained within this rim in the cap is fired and driven down the cone into the chamber. With this nipple I find that I can ignite powder at the bottom of the nipple; while in the old nipple no such ignition will take place." (*Greener on the Gun*, p. 131.)

2465. Westley Richards's patent touch-hole, or new steel primer, we will also take this opportunity of noticing, as being very highly spoken of by many crack-shots of our acquaintance. Colonel Hawker likewise tells us he has never known it to fail, and that his son "shot with it for a whole season without one misfire." That the reader may form an adequate idea of this improved touch-hole, we will present the heads of Mr. Richards's specification of it:—"The quantity of priming required being small, little flame and noise accompany the discharge; nor can any exploded matter, as that from the copper cap, reach the eyes. The communication of ignition with the charge is much shortened by this primer; nor can the touch-hole become stopped up by copper from the cap, as occurs in the usual method of priming. The primers are large, and consequently handy to apply in cold weather, and they can be detached in an instant; and further, every percussion-gun can with little trouble and expense be made to receive them." Mr. Richards lays much stress also on the expedition with which the gun may be charged with it, and of the comfort of obviating the difficulty and inconvenience by the mode hitherto practised, of supplying the charge with the fingers. "Nor is this," he observes, "the only advantage to be obtained by the use of this instrument, as by its means a much shorter tube may be applied, which will in a very considerable degree prevent the outward flash and lessen the report occasioned by its explosion, and thus effectually remedy the evil so generally complained of by gentlemen who have been in the habit of using the tube-guns." It is no small advantage that all copper cap-guns of other makers can have these patent touch-holes applied to them without interfering with the copper cap system, which Mr. Richards engages to do with the same care as he employs on his own. We will, however, from this digression on the pivot or nipple of Mr. Greener, and that of Westley Richards's new primer, return to a general description of the percussion-lock in all its parts.

2466. *The cock or striker (a,b,c,d, fig. 379.)* here, as well as in the flint-lock, is a very important agent, and is usually made after what is called the dolphin fashion. The extremity of the striker (*d*) is tubular; and thus, when the gun is fired, it falls directly on and over the nipple, the bottom of the cavity striking the copper cap, which is placed on the nipple or pivot (*e*). This extremity being originally made without any cavity, proved dangerous, and indeed destructive, to the eyes of several persons: it was therefore made tubular, and now the striker is further protected by a circular rim (*c*), and a breeching wall elevation also (*g*). Notwithstanding these contrivances, it is yet necessary to examine that the hollow in the striker be so made as that none of the fragments detached from the shattered cap can reach the eye of the sportsman. The centre of this cavity, and the centre of the nipple head, should exactly meet also when the striker falls, to insure the fire. It is very judiciously directed by Colonel Hawker, that, more effectually to avoid danger from the detaching portions of the copper cap, the main-spring should be of sufficient strength to prevent its flying up by recoil. This ingenious sportsman, to make surety double, recommends an upright striker; into this he inserts a tubular portion, with an effective shield of his own invention, both of which are fully described and figured in the last edition of his work on *Shooting*, p. 77.

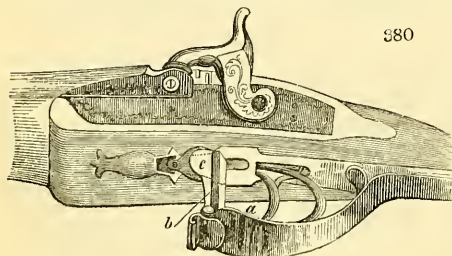
2467. *The vent-hole.* "A detonator," says Colonel Hawker, "without a vent-hole, though perhaps it may shoot a little stronger, is very liable to corrode, and recoils most cruelly. The best vent-hole, to my fancy, is a fixed one of platina, similar to a touch-hole, as vent-screws, I find, are liable to rust in; and, unless lined with platina, are either soon choked up with rust and dirt, or blown too large by repeated shooting." (P. 74. ed. 8.) "How doctors do differ!" Mr. Greener objects to vent-holes altogether, "although they are now so generally attached to detonators. Instead of preventing misfires," he continues, "it must cause it by allowing the air, when ramming down the wadding to escape through it, and thus keeping open a space that should be perfectly closed. As to allowing the gas to escape that way, it cannot be; for if the nipple be filled with powder, it cannot get to that distance, and cannot therefore escape, except when a misfire occurs; and I imagine the existence of such a vent would not then be considered an advantage. In favour of the vent-hole it is urged, that a gun recoils very much without one. True; but then, Why does it not recoil so much with one? Because so much of the explosive matter is allowed to escape through the vent, and thus the percussion-gun is reduced to a level with the flint." (P. 131.) If, indeed, it can be proved that much of the explosive force does escape by the vent-hole, which we rather doubt, then, indeed, it would be better done without; and as two, and sometimes three, are found in one lock, it would be well that a course of experiments were set about to determine the question. Such sportsmen as have any fears of the vent-hole weakening the explosive force may find a substitute, as we have already hinted, by perforating the wadding, particularly that which covers the powder. What precedes is, we believe, a just representation of the percussion-gun, as received after the abandonment of the magazine-locks. Various alterations and, as they were called, improvements have been since added, the more important of which we shall notice as we proceed; others, not important, would have uselessly encumbered our pages.

SUBJECT. 2. *Of Safety Gun-locks.*

2468. *Safety gun-locks* have been the aim of many contrivers, but the complexity of some of them, the cost of others, and the carelessness of many persons in their sportings, have prevented a sufficient attention to the ingenious inventions which had been brought out. We will, however, notice a few of the most efficient.

2469. *The safety lock of Dr. Somerville*, which was intended to accompany the percussion principle of Forsyth, was no less ingenious than humane in its object. Dr. Ure says of it that,—“Its essential feature is a slide, stop, or catch, placed under the trigger (*a*, fig. 380.).

380



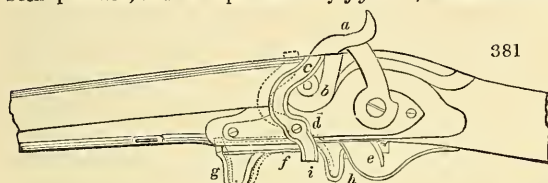
SOMERVILLE'S FIRST SAFETY LOCK

It is pulled forward into a notch in the trigger by means of a spring (*b*) upon the front of the guard, which is worked by a key (*c*), and pressing upon the spring when the piece is discharged. In another safety plan there is a small movable curved piece of iron, which rises through an opening in the lock-plate, and prevents the cock from reaching the nipple, as represented in the figure, until it is drawn back within the plate of the lock when the piece is fired. To fire this gun, two different points

must be pressed at the same time. If by accident the key which works the safety

be touched, nothing happens, because the trigger is not drawn; and the trigger touched alone can produce no effect, because it is locked. The pressure must be applied to the trigger and the key at the same instant, otherwise the lock will not work." It is without doubt that this gentleman's intentions were most philanthropic, and equally so that his attempts were ingenious, although somewhat overrated, which always proves injurious to the success of any discovery, and even detracts from that degree of approbation which would otherwise accrue. The eulogists of Dr. Somerville represented the advantages of the discovery to be as numerous as important. The first was the preservation of human life; second, superior dispatch; third, the confidence it gives to the shooter; fourth, by forcing the shooter to place his left hand on the front of the guard; should the gun burst, the hand is still secure; fifth, it prevents the necessity of perpetually cocking and uncocking the lock. To these are added, the safety given by it to the point of the sear, and the impossibility of firing the gun accidentally, &c. &c. And yet, with all these advantages, the Somerville safety, although ingenious, was never extensively used.

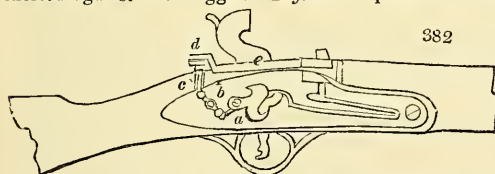
2470. *Baron de Berenger's safety lock* is also one among the many inventions which have been patented, and is represented by *fig. 381.*, which exhibits the lock and breech of a



BERENGER'S SAFETY LOCK.

fowling-piece with a sliding protector on one of the improved plans; *a* is the hammer, *b* the nipple of the touch-hole, *c* a bent lever turning upon a pin fixed into the lock plate at *d*. The upper end of this bent lever stands partly under the nose of the hammer, and *e*, the trigger, which stops it from striking the nipple. A slider (*g, f, h*), connected with the under part of the gun-stock, is attached to the tail of the bent lever at *i*; and when the piece is brought to the shoulder for firing, the hand of the sportsman, pressing against the bent part of the slider at *g*, forces this back, and thereby moves the end of the lever (*c*) forwards from under the nose of the cock or hammer, as shown by the dotted lines. The trigger being now drawn, the piece will be discharged; and on removing the hand from the end (*g*), of the slider (*f*), the spring at *h* acting against the guard, will force the slider forward, and the lever into the position first described."

2471 *Mr. Redford, gun-maker*, of Birmingham, proposes a modification of the lock for small fire-arms, in which the application of pressure to the sear-spring for discharging the piece is made by means of a plug, depressed by the thumb, instead of the force of the finger exerted against the trigger. *Fig. 382.* represents a fowling-piece partly in section. The

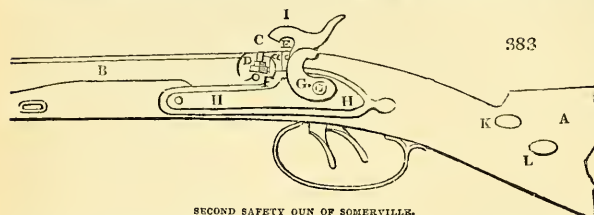


REDFORD'S LOCK.

sear-spring is shown at *a*. It is not here connected with the trigger, as in other locks; but is attached by a double-jointed piece to a lever (*b*), which turns upon a fulcrum pin in its centre. At the reverse end of this lever an arm extends forwards, like that of an ordinary sear-spring, upon which arm the lower end of the plug (*c*) is intended to bear; and when this plug is depressed by the thumb bearing upon it, that end of the lever (*b*) will be forced downwards, and the reverse end will be raised, so as to draw up the end of the sear-spring, and set off the piece. For the sake of protection, the head of the plug (*c*) is covered by a movable cap (*d*), forming part of a slider (*e*), which moves to and fro in a groove in the stock, behind the breech end of the barrel. This slider (*e*) is acted upon by the trigger through levers, which might be attached to the other side of the lock plate, but are not shown in this figure, to avoid confusion. When the piece is brought to the shoulder for firing, the fore-finger must be applied as usual to the trigger, but merely for the purpose of drawing back the slider (*e*), and uncovering the head of the plug; when this is done, the thumb is to be pressed upon the head of the plug, and will thus discharge the piece. A spring bearing against the lever of the slider will, when the finger is withdrawn from the trigger, send the slider forward, and cover the head of the plug, as shown. On the safety principle no one can look with more approbation than ourselves, but we apprehend the only real safety is in the care and precautions used by the shooter. With these alone the shooting of half a century would be without mishap: without them, no machinery can insure perfect safety. Dr. Ure observes,—“It is with pleasure I again advert to the humane invention of the Rev. John Somerville, of Currie. In April, 1835, he obtained a patent for a further invention to prevent the accidental discharge of fire-arms. It consists in hindering the hammer

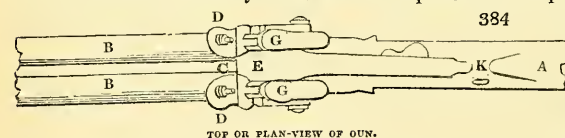
from reaching the nipple of a percussion-lock, or the flint reaching the steel of an ordinary one, by the interposition of movable safety studs or pins, which protrude from under the false breech before the hammers of the locks, and prevent them from descending to strike. These safety studs or pins are moved out of the way by the pressure of the right hand of the person using the gun only when in the act of firing, that is, when the force of the right hand and arm is exerted to press the butt end of the stock of the gun against the shoulder, while the aim is taken and the trigger pulled. In carrying the gun at rest, the proper parts of the thumb or hand do not come over Mr. Somerville's movable buttons or studs."

2472. *A second safety principle* for percussion-guns, invented by Dr. Somerville, is thus figured and described by Dr. Ure:—"Fig. 383. is a side view of part of a double percussion-



SECOND SAFETY GUN OF SOMERVILLE.

breech, on the under side of which the levers, which work the safety studs or pins, are placed; f is the shield of the false breech; g triggers; h the lock-plate; and i the hammers; all of which are constructed as usual: a a are the safety studs or pins, which protrude before the shield (f) and work through guide pieces on the under side of the false breech. The button-piece is placed in the position for the thumb of the right hand to act upon it; but when the pressure of the ball of the right thumb is to produce the movement of the safety studs, it must be placed in or near the position (k); and when the heel of the right hand is to effect the movements of the safety studs, the button-piece must be placed at l, or nearly so. In



TOP OR PLAN-VIEW OF GUN.

these last two positions the lever (which is acted upon by the button-piece, to work the safety studs through a slide) would require to be of a different shape and differently mounted. When the hammers are down upon the nipples after discharging the gun, the ends of the safety pins press against the inner sides of the hammers. When this invention is adapted to single-barrelled guns, only one pin (a), one lever and button-piece, will be required."

2473. *M. Golding's safety gun*, which some years ago attracted much attention, was a modification only of that of Dr. Somerville. Indeed, if report speaks truly, these gentlemen united their inventions, and worked them under one patent, thus nullifying the old adage, that two of a trade can never agree.

2474. *Mr. Moore's improved gun* bears somewhat of the following character:—The lock, when fixed in its proper position, is entirely distinct from the barrel, thus securing the interior from wet or dirt. The works appear strong, and yet act with effect and ease; and further, it is described as being simple in construction, and that the various portions can be readily applied to any other lock.

2475. *The safety or gravitating stops* of Mr. Joseph Manton were some years ago in great repute. Whether, however, from the capriciousness of the public taste, or the trouble required to keep these little rolling stops sufficiently free from dogging, we are not aware; but certainly we hear but little of them now. The invention was an ingenious one, and in its application to double guns it was a very useful one also; for it entirely removed the danger arising from the very reprehensible custom of loading one barrel with the lock of the other on full cock. It also allowed the sportsman to carry both barrels on full cock, with the simple precaution of holding the muzzles of the gun downwards, so as to allow the stops to gravitate. In climbing up banks, or making way through hedges, &c. the determined sporter of the full-cocked gun, by merely inclining it a little, might indulge in his otherwise reprehensible habit with impunity. It would be still better to carry it quite upright, as was our own practice on all occasions when it might self explode. We have so much dependence on the safety of a good gun when carried erect, that we would avoid any one on the so named safety principles. The steady and well practised shooter needs no patent guards beyond his own habitual cautions in the carriage of his gun generally, and in the change of position it necessarily makes when it is going to be fired. Perfect coolness under every exciting circumstance is the best safety stop.

2476. *Safety trigger.* Mr. Moore, a well known and excellent gun-maker, has also a safety trigger or stop, which is said to be very certain, and not troublesome to keep in order. Many, nay most, of these safety plans are sufficiently effective; but the gunner begins with the simple gun usually, and his initiatory training being completed on that, he does not relish being hampered afresh with processes he was not broken in to. He should, however, remember "To live and learn," is a good motto.

2477. *Water-proof triggered lock* of Tatham, Charing Cross. This addition to our stock of new inventions consists of a new lock of a triangular form, placed under the trigger plate, in a hollowed part of the stock purposely made to receive it, where it is protected by the trigger plate. The cock occupies its old place, where it works on a silver plate that reaches to the guard. This gun has a handsome appearance, and Mr. Tatham shows many commendatory notices of it; but it has not yet, we believe, commanded any very extensive sale. We remember to have seen something of a similar gun in France some years ago; but we do not by this mean to insinuate that Mr. Tatham has borrowed the idea. We allude principally to the circumstance of the works being rather under than either above or on the side of the stock.

2478. *Additional improvements in fire-arms* are at the present time very abundant, and we have reason to believe that many more are contemplated. After nearly forty years of uninterrupted tranquillity, the horrors of warfare breaking upon us twice unexpectedly, has taught us the necessity of being always prepared, and of arming our gallant and invincible troops with the very best weapons that modern science can invent or money provide. Lovell, Lancaster, Wilkinson, Colt, Dean and Adams, Forsyth, Guthrie, are all names identified with this important branch of our national enterprise, an enterprise that contributes as well to our protection and independence as to our pleasure. Indeed, the movement descends to our pleasures, for great interest is now taken in the perfection of both guns and rifles for sporting purposes. The editor of the *Field Newspaper*, a well-conducted weekly publication devoted to rural matters, sporting and agricultural, lately instituted a trial of the relative merits of the breech loaders and muzzle loaders, which, though not so satisfactory as it might have been, owing principally to the owners of the muzzle loaders demurring to the extra allowance of gunpowder to the breech loaders, in order to place them upon terms of equality, was nevertheless symptomatic of the progress making in these accessories to our amusements. The trials took place at Ashburnham Park and Kilburn Victoria Rifle Ground; and the general result was that the breech loaders, despite their extra allowance of powder, were beaten by the muzzle loaders.

2479. *Mr. Jones's new gun.*—A Mr. Jones put forth a bombastic prospectus some years since of a marvellous gun of his, which we may here insert:—"The leading characteristic of this gun is the perfect attainment of the *direct central fire*. The effecting of a direct central ignition of the charge in fowling-pieces has been a desideratum in gun-making for the last sixty years. It was first attempted by a very ingenious mechanist of Weimar, who pursued his object with great ardour for several years, but who at length abandoned it, not being able to accomplish it in an eligible manner. He was followed by many other gunsmiths of England, France, and Germany, but with no better success. At length the *percussion principle* was introduced, and it was soon perceived that this discovery appeared greatly to favour the accomplishment of the desired object, and it was now pursued afresh with considerable ability, and with more or less success, in almost every country in Europe. But although the *central fire* was actually effected by several persons, yet it was, in every instance, either so imperfect in itself, or combined with such defects, as rendered it of no value; and they were all (some of them after great labour and expense had been bestowed upon them) successively given up. The best attempt made in England, and which, by the bye, is not abandoned, is exhibited in a walking-stick gun, in which the central fire is effected by the action of a spiral spring; but these guns come rather under the denomination of *toys* than that of fire-arms. The nearest approximation to the true principle was made about eight years ago at Liège in Belgium; but even this, from the number and importance of its inherent defects, was a total failure. It therefore appears, from the time and the money expended, and from the number of persons who have failed in the undertaking, that there have been great difficulties found in the way of reducing this simple but important principle to successful practice; and, indeed, to this truth I can speak very feelingly; for although I have had the benefit of the lights which my predecessors in the attempt had thrown upon the subject, and I admit they were very important to me, either as exhibiting valuable ideas to be pursued, or errors to be avoided; yet, so numerous were the difficulties to be overcome, some of them making their appearance in the most unexpected manner, after the whole was supposed to be perfect, that it has cost me *three years* of unremitting application to bring it to the state in which it now is; and which, I flatter myself I may say, without violating truth or propriety of expression, is, *mechanically speaking*, a state of perfection. The gun has, indeed, now passed the *true-testing* ordeal! the only one that can be relied on in such a case, viz. *the practice of the sportsman in the field*. And it has given the most perfect satisfaction to some of the best *shots*, and most

critical judges in England." To this explanation is appended notices of those illustrious persons who have patronised it. Among whom may be seen the Duke of Cumberland, who, after an inspection of it and conference with Mr. Jones, ordered one, and subsequently ordered another to match it. The Duke of Sussex was also pleased to express his approbation of the gun, and offered an assurance that, should the intended operation on his royal highness's eye succeed, he would likewise order a case of these guns. We are also informed that, among many other purchasers of rank, are their graces of Bedford, Buccleugh, and Newcastle. Mr. Jones's address continues thus: — "I have also been especially honoured by the distinguished patronage of several illustrious foreigners. His majesty the king of Sardinia, who is one of the greatest sportsmen in Italy, has, through the recommendation of his commandant d'artillerie, Colonel Lampo, to his excellency Count d'Aglié, his majesty's ambassador in London, been pleased to honour me with his commands for a gun. His royal highness the Duke of Orleans, after having passed two days at Versailles, where he went for the purpose of trying the gun, and where, his royal highness informed me, he had given it *a very severe trial*, expressed his entire approbation of it, stating at the same time that it was decidedly superior to any other gun he had ever shot with; and he not only purchased the one which he had tried, but honoured me with his commands to make him another to match it. I may further add, that M. Le Comte Edouard Montguyon and M. Le Colonel Gerard, the two aides-de-camp who attended his royal highness on the trial, both did me the honour of ordering guns for themselves. His majesty the king of the Belgians, who was staying at the Thuilleries, saw the gun, and doubtless heard the account given of it by his royal highness the Duke of Orleans, also did me the honour to command me to make him a gun. The Council of L'Académie de L'Industrie de France, for the promotion of agriculture, manufactures, and commerce, examined the gun, after which they appointed a special committee. I have named these things for the purpose of showing that the gun has been critically examined and proved by competent judges."

2480. Mr. Jones's *prospectus* next proceeds to enumerate the advantages of this gun, which it is stated are of two kinds: — "Firstly, such as appertain to the gun itself; and, secondly, such as are personal to the user of it; which advantages may be briefly enumerated as follows: — 1. The obtaining of a direct central fire. 2. The certainty of not missing fire. 3. The superior quickness of the fire. 4. The superior strength of the fire. 5. The diminished recoil of the gun. 6. The protection of the eyes from the flying off of the copper caps. 7. The removal of the annoyance of the flash in firing. 8. The protection of the priming caps from wet. 9. The impossibility of blowing out the cones or nipples. 10. The impermeability of the locks to wet. 11. The great simplification in the construction of the locks. 12. The very superior mechanical action of the locks. 13. The superior strength of the stock. 14. The general superiority and greater durability of the gun." Mr. Jones next proceeds to explain these advantages at length; but although our limits will not allow of our giving them as they stand before us, yet we shall offer the pith of the intention of the author's meaning: — 1. *The obtaining of a direct central fire.* The central ignition of the charge is effected by making the cap the contrary way to the old one; that is to say, the detonating powder being put into a cup on the *outside*, instead of the inside of the cap, and the gun is primed by placing the cap on the end of the striker or hammer, the priming cap is therefore fired directly into the charge of the powder. 2. *The certainty of not missing fire.* This certainty arises from there being no angular or crooked channel. 3. *The superior quickness of the fire* which results from the foregoing. 4. *The superior strength of the fire* which no doubt arises from the ignition of the whole *body* of the charge of powder being more *perfect* and more *simultaneous* than it is in other guns. 5. *The diminished recoil of the gun.* Mr. Jones's opinion is, that the diminished recoil is only apparent, not real, and that it is to be accounted for by the retrograde action being immediately upon the end of the striker, which is supported by the main-spring; that is to say, the action is upon an elastic body, and that the blow of the recoil is thus softened into a mere push, which neither causes pain at the time, nor any feeling of soreness afterwards. 6. *The protection of the eyes from the flying off of the copper caps.* The great importance of protecting the eyes from injury will be appreciated by every one. *The removal of the annoyance of the flash in firing.* The flash being made to take place within the exploding chamber is perfectly invisible to the person firing the gun. This gives confidence and steadiness in shooting, and is, at least, pleasant at all times: but on many occasions it is of much greater importance; in shooting, for instance, in a gale against the wind, the gas and smoke from the caps are often blown into the eyes, making them smart severely; besides which, I have frequently known the unignited particles of the percussion powder thus carried into the eyes, cause a very considerable degree of inflammation. With this gun such effects cannot happen. 8. *The protection of the priming caps from wet.* The importance of keeping the priming caps dry is too obvious to need enforcing; and it is clear that no wet can get into the priming cap of this gun, because it is fixed upon the striker, which is within the hammer chamber, and which is closed by a sliding cover. 9. *The impossibility of blowing out the nipples.* This is a very important security. The nature of this gun is such, that the nipple can be

screwed into the solid masses, forming the huts of the plugs, and by this means any *power of screw* may be taken, and the power which is taken is *double* that of the *resistance* of the barrels; that is to say, *half* the power which will blow out one of the nipples will *burst* the barrel; therefore these nipples can never be blown out. 9. *The impermeability of the locks to wet* is a very important point, and, as far as our judgment goes, on our inspection, it seemed, if not perfectly, at least very nearly attained. 11. *The great simplification in the construction of the lock*: its simplicity is certainly attained by there being but one lock-plate to two locks, and these also perform the offices of lock-plates and trigger-plate; in fact, there is great ingenuity displayed in this union of purposes with diminished machinery. 12. *Of the superior mechanical action of the locks*; 13. *The superior strength of the stock*; and, 14. *The general superiority of this gun*. On which points all we can say is, that a minute inspection of it must interest every one in its favour. If it does not perform all that is here alleged in its favour, it seems to have made a wide stride towards it.

SUBJECT. 3. *The Gunstock.*

2481. "*The length, bend, and casting off of a stock,*" Colonel Hawker tells us, "must be fitted to the shooter, who should have his measure for them as carefully entered on a gun-maker's books, as that for a suit of clothes on those of his tailor. He has then only to direct that his guns may be well balanced; to do which the maker will put lead in proportion to their weight; so that on holding each of them flat on the left hand, with the end of the lock opposite the little finger, he will find a sufficient equilibrium to make the gun rest perfectly steady on the hand." (P. 33.) There is so much good matter comprised in these few lines, that they cannot fail but to interest the reader. After his usual pithy manner, much is condensed into a small compass; we however cannot help fancying that the colonel had Mr. Baker in his eye, when he compares the necessity of the fit of the stock with that required of a tailor in measuring for clothes; for Mr. Baker employs a machine or stock gauge, by which he measures the outline of his customer as regards length of arm, neck, &c. so as at once to furnish each with a true fitting stock. There are, however, others also, who use the stock gauge; some likewise can fit by eye; and there are still more, who, provided you will buy, do not trouble themselves much about the fit. Mr. Greener, following in the wake of the colonel, likewise observes,—"There is as much skill required in fitting a stock to the capacity of the different forms, shoulder, and length of neck, as in fitting a vest or dress-coat to please a dandy." Ay, and much more, good Mr. Greener! for a dandy is but a dandy, be his dress ever so monkeyish; but the sportsman, with a well fitting stock, feels up to acts of much enterprise, and can then shoulder his gun, and show how game is to be taken. When the stock is too short, particularly if it is rather straight, unless the head is carried very forward, the shooter will throw his shot above the object fired at. On the other hand, a long and crooked stock, especially when in the hands of a short person, will be apt to make him shoot below his mark. Where all depends on the judgment of the purchaser, let him try which piece he can at once raise to his shoulder, and cover any given mark without further adjustment. Let him also change the object of aim repeatedly; and if, by a voluntary effort of the arms, without farther alteration of himself or gun, he can *sight* the object readily, he will not do amiss to take that as his pattern. Let also the length of the stock correspond to the height of the user; thus in general cases it should be longer for a tall man, and *vice versâ*. With high shoulders and a short neck, a straight stock is the most handy; but it must be remembered that a straight stocked gun recoils the most. With low shoulders and a long neck, allow your stock sufficient curvature and proportionate length. An error in length, it may be observed, is less unfavourable to good shooting generally than when we employ a stock too short. If from the commencement of your shooting practice, you will accustom yourself to a stock longer than at first appears agreeable, you will gradually become used thereto, and will hold it more firmly than a shorter one. You will also gain another advantage, for by thus pressing the gun more closely to the shoulder, you will lessen the recoil to yourself, and assist the gun in its range also by the resistance you offer, as we have hinted at in another place. With regard to the wood that forms the stock, we think none exceeds the walnut tree: bird's-eye maple may please the eye of some, and it may, from its brittleness, serve the cause of the gunstocker. It is certainly striking, and should you choose such stocking, Colonel Hawker offers you some excellent instructions for staining it handsomely. In the shape of the stock, be careful that it be deep, and come out well at the toe or bottom of the heel-plate. It often happens that a sportsman meets with the gun of a friend, which, on shouldering, rises up as it were by magic, and points to a mark, as though it did it instinctively: it does so, if not instinctively at least mechanically, because it corresponds exactly to his height of shoulders, length of arm, or bend of neck, or of all these points conjointly. In such a case we would advise him to rest this gun on a thin board, and then to take an accurate outline of it from the heel to the breech, observing, however, whether the breech of the pattern gun be more buried in the stock than usual, or be more superficially placed

than is common. Without such caution the pattern might not be in unison with the real inclination of the united portions of the pattern gun. When a gun does not balance well in the hand, but dips forward, the defect may be remedied by running in melted lead under the heel-plate towards its toe. By such placing less lead will be required, and it will rise easier to the shoulder, and balance better. It may also be well to state that a gunstock, either too straight or too crooked, may be made to yield somewhat either way by boiling it; but of course it must be done with much judgment, and it must be repolished and restained. We hardly need observe, that the butt of the stock is, in some guns, what is technically called *laid off*, or *cast off*, i. e. it receives an outward inclination from the hands of the maker, which has the effect of drawing the line of aim inwards: therefore be careful to inform yourself on this point, otherwise it may be sometime before you can accommodate your shooting to its line of aim. In examining the stock of a gun, observe also whether the tipping of it exactly reaches the lower rib. Some tip ends are finished with one loop of the ramrod, others are horn-tipped, and some with silver. It is an excellent caution of Colonel Hawker's, that between the end of the rib and the extreme end of the tip, be it finished off with what it may, a vacancy of the thickness of a shilling should be left, otherwise the recoil of the gun may injure the stock, or loosen the tipping, particularly if it be of horn. (See any of Colonel Hawker's later editions of his work on *Shooting*, for many excellent remarks on gunstocks.)

SUBJECT. 4. *Technical Names employed for the Parts of a Gun.*

2482. As these names are conventionally used by most sportsmen, so they should be borne in mind.

Bolts. — Irons which enter the loops or eyes of the barrel to fasten it to the stock.

Bridle. — A polished piece of steel which caps the tumbler, and is secured by two screws. It also receives the sear-screw.

Butt of stock. — The shouldered extremity of the stock.

Cap. — It covers the ramrod screw cap; is also used for the tip of the stock.

Casting off. — The outward inclination given to the butt of the gun, being intended to incline the line of aim inwards.

Chain or swivel. — A small catch suspended from the neck of the tumbler, to receive the extremity of the main-spring.

Chamber. — The central cavity within the breech to receive the powder. The *antechamber* is the smaller one which connects these with the touch-hole.

Cock. — In the flint-gun it holds in its jaws the flint; in the percussion-gun it is equally a cock, but there it is more frequently called the *striker*.

Cock-screw. — The screw that brings the jaws of the cock together.

Cup. — The cavity seen at the top of many of the improved breechings.

Escutcheons. — Ornamental pieces of silver to prevent the bolts from defacing the stock when the turn-screw or pincers are applied. Escutcheons are also used on other parts to receive initials, crests, shields, &c.

False-breech. — This receives the *hut* or nose of the breech when the barrel is fastening into the stock.

Elevated breech or rib is a top piece much elevated, first used by Mr. Joseph Manton.

Fence. — The part between the cock and pan which receives the solid cock.

Guard. — The bow which defends the triggers.

Hammer-spring. — That on which the hammer moves.

Hammer-bridle. — The part in which the tail of the hammer works.

Heel-plate. — The plate with which the butt of the stock is tipped.

Jaws. — The lips of the cock which hold the flint.

Lock-plate. — Supports the principal works of the lock.

Loops. — Eyes on the outside of the barrel, which receive the bolts that fasten it to the stock.

Main-spring. — That by which the tumbler is worked with the cock.

Nipple, or pivot. — The small iron pillar that receives the copper cap of the detonator.

Pipes. — Tubes to receive the ramrod.

Rib. — Central piece of iron which unites the barrels and receives the ramrod.

Scroll-guard. — An extension of the guard which receives the right hand in firing the gun.

Sear. — That which catches the tumbler for half or whole-cock, and being pushed up by the trigger.

Sear-spring. — The spring which holds the sear in the notches of the tumbler at either half or whole cock.

Side-nail. — A screw which fastens on the locks.

Sight. — A patch of metal, usually of silver, placed near the gun-barrel to direct the aim.

Spring-cramp. — A useful instrument, to assist both in taking to pieces and putting together the parts of the lock.

Tail. — The neck, shoulder, or arch of the hammer.

Top-piece. — This opposes the rib which unites the lower arches of the barrels. When it is very prominent behind, it is called the elevated rib.

Trigger-plate. — The triggers work in it.

Trigger-springs are small springs found in some highly finished locks, and are intended to keep the triggers close to the sear.

Tumbler. — The movable centre piece of a lock, which falls with, and is subservient to, the cock.

Tumbler-screw. — This fastens on the cock.

Vent-hole. — Sometimes there are two or three vent-holes, which are intended to let out the gas in detonator, and thus to lessen the recoil.

Worm. — The screw at the end of the ramrod.

SUBJECT. 5. *The Preservative Treatment of Guns.*

2483. *Some wise body tells us*, that if you want your work well done, do it yourself; and we are from experience convinced of the truth of this old adage. As regards a gun, too much care cannot be taken of it, particularly it requires much dexterity and great caution in taking it to pieces, and even more in putting it together again. To do it well calls not only for much mechanical skill, and a light but firm hand, but it also requires a personal interest in the matter that none but the owner is likely to feel, except he have a more than usually trusty and expert servant. We were never so situated in life as not to be able to command some assistance; but as regarded our sporting implements, particularly those connected with our guns, we never allowed any domestic to interfere in the least with them: nor do we remember ever to have had a gun cleaned by any other hand than our own. Thus it was that we never had a gun injured by an officious hard-handed fellow,

who would do too much, nor one ruinously neglected by another who did too little. Every gun, if only moderately used, requires occasionally to be taken entirely to pieces. Twice a year is not too often to take out the breech or breeches wherever a gun is much used; the pivots, and the lock or locks, will require more frequent attention. The implements necessary are a bench, vice, turn-screws of various sizes, from the delicate one of an eighth to those of a quarter and a half of an inch, the latter for the turning the cock-screw, breech-screws, and for raising the bolts which secure the barrel in the stock. The spring-cramp is an essential requisite, and once more we would recommend every gunner, particularly one out of the immediate reach of a gun-maker, and not having a relay of fowling-pieces, to be furnished with duplicates of every part of his gun that is liable to fracture, as springs, cocks, and pivots. When using the spring-cramp, take care not to screw up the springs you cramp too closely, otherwise you may irreparably injure their elasticity. It is true that a very little over cramping would snap them, if they were really made of the very best tempered steel; but that is not always the case, and it is then the cramp may seriously injure their elasticity, without breaking them: in such case we might know little of the matter until informed of it by the defective action of the lock. Although we also have had much experience in the manipulations attendant on the care and management of the sporting gun, yet we are not so egotistical but that we readily yield the palm to Colonel Hawker. We cannot therefore, while we offer the results of our own experience, refrain from frequently alluding to the superior instructions on the subject offered by him, and from recommending them to the careful perusal of every young sportsman.

2484. *In taking off the main-spring*, first put the lock on full cock; next cramp the main-spring; this done, let down the cock, and the main-spring will fall off. When it is necessary to put the lock on again, first let the cock be left down; then hook the end of the main-spring on the swivel or chain; then move it up, and place it into its position on the lock-plate; this done, unscrew the cramp, and the lock is once more fit for action. When it appears necessary to take off the hammer, first shut down the hammer carefully, cramp the spring, until, by shaking the lock, the hammer is heard to rattle. Now go no further, but take out the screw behind, and the hammer will fall off. When required to put it on again, you have nothing to do but to replace it in its former situation; turn in the screw, and set the spring free. If it be wished to take the hammer-spring out, the hammer must first be released and the main-spring also, to enable you to get at the screw behind. The hammer-spring must then be cramped, till it is taken out and put on again to receive the hammer.

2485. *To take to pieces the small works of a gun-lock.* Be careful that you keep your several screws distinct; were they mixed, it is ten to one but that confusion, if not injury, would follow. Having commenced by taking off the main-spring, next unscrew and take out the sear, by half cocking of the lock; clasp the forepart of the lock, firmly pressing the thumb at the same time against the hinder part of the cock, directing it forward, while the sear and sear-spring, being now pressed together with the forefinger and thumb, will facilitate the taking out the sear-screw. Having done thus far, undo the two screws, take off the bridle, and then unscrew and take out the sear-spring; next unscrew and take off the cock, which will readily separate from the tumbler, if it be gently tapped or shaken: this done, take out the tumbler, and your lock is dismembered; but take great care that none of the separated parts are overlooked and allowed to become hidden by matters around, or by falling on the floor, a circumstance we have known to happen.

2486. *When it is required to put the lock pieces together again*, proceed as follows: first, put the tumbler in its place, and screw on the cock; next, do the same by the sear-spring; set on the bridle with the two upper screws; then put in the sear; but to open a clear passage for the screw of the sear, be aware it is necessary that you again, as before, press the forefinger and thumb on the sear and sear-spring, and also that you again push the cock forward, as when taking off the sear. Without this pressure it is not easy to get the hole in the sear opposite the hole in the bridle; and without this the sear-screw will not enter. We have seen this neglect, by a little inadvertence, require a gun to be sent ten miles to a gunsmith. But to return to our subject. Now let down the cock, to admit of putting on the main-spring, and the process is finished. It is evident that, with the detonating gun, there is not one-half of this trouble in disjoining the machinery. The pivot, or nipple, will require to be occasionally unscrewed and examined, that corrosion may not have done any injury; and further, to prevent disappointment from such a source, when a gun is purchased, remember to be provided with spare pivots, all critically adapted to the barrel. We hardly need remind the sportsman that, although it is but seldom that he will find it necessary to take all the works of his gun to pieces, yet it will be prudent, every now and then, to put a little pure olive oil with a camel's hair pencil on the pivot nail, or centre of the tumbler, on which almost all the works of guns of both kinds move. On the lock-plate under the works do the same. To those who use the flint-gun, it will be further necessary to apply a little oil under the neck of the hammer, which will flow to all the dependencies. Additional care, and more frequent attention, be it remembered, is requisite for the percussion than for the flint-lock,

although the latter presents more complicated machinery than the former. This results from the corroding property of the gases evolved, being so much greater in the one than the other. Lancaster's printed directions given to gentlemen who buy percussion-guns of him, embody all that is required on this head, and are as follows:—"Always clean those parts of the barrels and locks that the detonating powder acts upon with a wet rag; then rub them dry, and leave them in oil, to prevent rust. The pegs should not be taken out too often. Before you take out the barrels, bring the locks to half cock. The locks do not require to be taken off every time the gun is used; once a fortnight is quite sufficient. Put a little fine oil to the parts where there is friction; but if the gun has been used on a wet day, the locks should be taken off to be cleaned and oiled immediately." It does occasionally happen that, by neglect or accident, a lock becomes rusted both within and without; in such case plunge it in warm water, and scrub it well by means of a hard brush, aided by very fine sand, emery powder, or levigated glass. Judiciously done, this will remove all the rust without any injury to the gun, provided it has not been very long neglected, or the rust collected having been occasioned by any actual corrosive matter, or by such continued moisture as deeply to abrade the surfaces which are intended to play on each other. When, however, this has happened, and the rust has corroded the metal deeply, scrape, scour, and file out the erosions, and if these fail, send the gun to the gunsmith. If the inside of a gun-barrel become rusty with a slight coating only of superficial rust, the same means may be employed; but we would recommend further, for security's sake, when the rusting is considerable, that the breech be taken out; and when the barrel has been scoured and dried, that it be held up to the light and carefully inspected. Should any specks remain, or any marks of indented corrosion be present, we recommend that these might be first well examined by yourself by means of an iron rod, with a bent process at the end. Should the result not satisfy you that it is very superficial, take it to your gunsmith, who, if he has any doubt on the subject, after a more critical inspection, ought to recommend that it be re-proved; or if you object to the cost, or are wanting in faith in the prover, you may prove it yourself by putting into it a charge and a half of both powder and shot, which, having put the loaded barrel into a small trench cut in a field or garden, ignite its charge by means of a train.

SUBSECT. 6. *Cleaning of Guns.*

2487. *Although the cleaning of a gun is an important matter to the sportsman, there are scarcely any two who do it exactly alike. Gun-makers themselves differ in the methods employed, although there are few that do not sport more or less, and who consequently are interested in the preservation of the guns they use. Lancaster's directions for cleaning guns run thus:—"Place the breech end of the barrels in a bucket, in which there is cold water about three inches deep; then after wetting the sponge, cloth, or tow, introduce the rod into the barrels, and work it well; next apply the wire brush attached to the cleaning rod with some clean hot water, which will take out all the lead in the operation. This should be invariably attended to, as it is well known that washing only will not remove the lead. Wipe the rod and the outside of the barrels dry, and set the latter upright, muzzle downwards, for two minutes to drain, after which rub them out perfectly dry. Wipe the barrels out clean, then pass an oiled rag down the inside, and rub over the outside; leave them a little oily, which will prevent rust. The use of cloth is preferred, as not subjecting gentlemen to the serious accidents that have happened from leaving tow in the chamber. Brass, being in its nature softer than iron, allows of the brush being used without the possibility of injury to the barrels." Colonel Hawker also directs cold water to be used in the washing of guns, as more readily removing the foulness within; but, as he thinks, by the application of hot water it dries and adheres more closely. We, however, have never observed it to do so, for we never allowed the barrel to self-dry; neither can we quite agree in recommending, as he does, that fine sand or brick dust be used to remove the lead. Very fine steel filings are equally efficacious in removing lead or rust as sand, and are never injurious, which cannot be said of sand; the frequent scouring with which (as the dropping of water only will wear away rocks), must tend to thin the barrel. If a coat of rust have already formed, then use it to remove that; but, at all other times, the steel brush rod is in our opinion all that ought to be employed, and that only when the leading has become considerable, which it takes some time to do if the metallic wadding be used.*

2488. *Our own method of cleaning a gun was as follows; and be it observed that, if it was more operose than was actually necessary, it was a fault on the right side; for we look on a gun not as a field article only, but likewise as an elegant toy, and one that we would have always before us:—Being provided with a kettle of boiling water at one side, and with an empty pail on the other, our barrels detached from the stock, and our cleaning rod furnished with tow, we commenced our operation by pouring the hot water down each barrel. This done, we inserted our cleaning rod armed as we have stated, with which we well scoured out each barrel, ending by reversing them to discharge the foul water. Having poured down and ejected a second quantity of hot water, we wiped out the barrels with fresh tow, until,*

by the absorption of the tow and their own heat, they were to all appearance as dry within as without. But as in our opinion it was possible that some moisture might insinuate itself within the screw joints of the breech and touch-hole, we always let down an iron plug short of a red heat, which we moved up and down one barrel for half a minute, when we transferred it to the other for the same purpose. This done, and our locks cleaned, our gun was either packed up in its case, or looped up entire for the morrow's use, as circumstances might require. Whenever we cleaned our gun in the shooting season we did not oil it within, but if we were in a house at all damp we inserted the *armed rod*, an article which will be noticed anon; and we strongly recommend every one who prides himself on his care of his gun or guns to do the like. Further, should he wish all this to be done well, let him do it himself; and, so doing, his gun will be dearer to him for the trouble it costs him, unless he be idle indeed!

2489. *How often a gun ought to be cleaned must depend on circumstances.* Some guns foul sooner than others, as those not well finished off. Some powder, also, fouls more than some others; and small shot fouls a gun more than large. Some waddings are certainly more apt to keep the gun from fouling than others, but nevertheless washing or cleaning is required for all; and indeed, after every twenty shots, the gun should be cleaned. Even in the field this may be done, if a servant be prepared with rod and tow; and, when actually necessary, hot water can be procured at any cottage; and while the master is lurching, the attendant can do it. We very frequently wiped out our own gun when shooting on the moors, and always were repaid by the more pleasant and effective way in which it fired afterwards.

2490. *When a gun is put by for the season, it should be particularly observed that it be placed where no damp can come to it.* But as it is impossible in some houses to exclude moisture, we must consider what is to be done to lessen an unavoidable evil. It is useless to depend on the shelter of the gun-case: we may, it is true, oil the barrel within and without; but even through this the wet will insinuate in very moist situations. We have seen the barrels filled up with tallow, which certainly then renders them damp-proof, provided the tallow be very pure, and wholly without salt, which is seldom the case. To remove the tallow from within when the gun is wanted, is also a troublesome and a filthy job. The outer surface of the gun may be varnished, which will enable it to resist a winter's damp; and by placing a piece of shoemaker's wax over the touch-hole, and a good soft cork within the mouth of the barrel, the gun may be preserved in a damp situation even. Our plan of protection was, however, more effective, much neater, and the means employed becoming a part of the apparatus of the gun, were always present, whether the gun was in use or not. For a double gun this preservative consisted of two rods, turned true to the length, and very near to the diameter of the barrels. The smallest difference between the size of the rod and that of the barrel was sufficient to allow the rod to have a covering of white kerseymer, which was either glued on, or, which is better, was *fine drawn*, according to tailors' phraseology. Whatever barrels we had in our palmy days, were furnished with one of these rods, as some who will probably read these pages must remember. We further placed a morsel of wax over the touch-hole, and we then bid defiance to damp. It remains to state that this method is particularly applicable to guns when sent long distances by land or water carriage, during which wet and damp are then usually liable to assail them. We have heard of guns sent to the moors, which, on their arrival there, were some of them entirely useless, and others greatly damaged. With the precautions we have detailed, careful packing, and judicious selection of their means of transit, these disasters might have been prevented. By no means put a gun by for the season without having the breech or breeches taken out; to effect which readily, steep the barrels in hot water. Having removed, cleaned, and thoroughly dried both male and female screw, anoint the threads with pure tallow, and return them.

2491. *To remove rust from the inside of the barrel.* We have been hitherto endeavouring, by the rules laid down, to prevent any rust from accumulating; but as it will sometimes occur, in which case it not only casts a reflection on the owner, but also proves actually injurious to the gun by lessening the range, and preventing its garnishing evenly, let us consider how to restore it to its original polish. Have an ashen rod turned a few inches longer than the barrel, and so nearly of the size of the bore, as to allow of the following process:—Let one end of the rod be cut lengthwise, so as to make a slit of six inches long, into which slit enter as much fine emery paper as will completely fill up the bore of the barrel, taking care, in folding the paper tightly round the wood, that the emery surface is outward. Force it into the barrel by screwing it downwards from the top to the bottom; repeat this process until the barrel is as clean and as polished as when it left the maker's hands. It is needless to remark, after the cautions we have given against using sand or any coarse matter that can abrade the surface of the barrel, that it is only the finest emery that should be used; from which, if judiciously employed on only one or two such occasions as these, no injurious effects can be apprehended. We need not inform the observant, that iron or steel well polished will not attract rust so readily as when, being slightly

abraded, it offers small indentations, by which the minute aqueous particles are detained. It may be asked after all this, Would it not be better to send the gun to be repolished by the gun-maker? It would save trouble, we grant; but will he not overdo the matter, and thus weaken the barrel?

2492. *The conscientious sportsman will be a careful one.* It is not always convenient to clean our gun directly we return home, but we can in every case displace the cap, or throw out the priming. Not but even then the gun may explode, if only a very few grains of powder remain. It requires, therefore, other precautions in putting away a loaded gun. The best, some say, is to lock it up: other sages tell us that the best of all is to *fire it off*; which we affirm is neither economical, nor is it always agreeable to the natives of the town or village you occupy to be thus alarmed (and prudence directs that you do not discharge your piece until you arrive there); children crying, dogs barking, all in an uproar, with a few gentle blessings audibly whispered on the intruder, are not welcome greetings on the return. Having therefore arrived at your door, remove the cap, if a percussion piece, or, if flint, throw out the priming, let down the spring of the lock, draw the ramrod, and dropping it down the barrel, put the gun away into a closet or glory-hole of your own; or otherwise suspend it high and dry in your study, and all must be safe, at least against the ordinary risks.

SUBJECT. 7. *Of Shot.*

2493. *The patent shot* is now in general use among sportsmen, and it is greatly to be regretted that the shot-makers will not unite in a compact to manufacture this article on one common scale of size, number, or letter. Of the methods of manufacturing we shall say little more, than that the circularity of the patent shot was obtained by pouring it from great heights, by which means the shot hardened ere it fell to the ground; and as in falling the resistances it met with were equally applied from the supposed rotatory motion, so it remained circular. The improvement in shot, by introducing quicksilver into its composition, was an important one. In rifle shooting it might be employed to great advantage on many occasions, particularly in attacks made on large animals, as elephants and other of the *Pachydermata*, or thick hided. Here the additional weight of the ball gained from the quicksilver assists the projectile force greatly, while the increased hardness obtained from the mercury employed would also assist the hunters in more readily penetrating the hides of many objects of foreign chase which now escape, or can only be conquered by an iron bullet, which must be large, and hence would require a gun of enlarged caliber and unwieldy dimensions. A shot-charge, formed of a mixture of quicksilver and lead, certainly fouls the barrel much less than that of lead alone; for which reason, were there no others, we do not despair of seeing it come into general use. Colonel Hawker also observes, that birds killed with this shot will keep much longer than those killed with any other. This opinion is something allied to that of Mr. Daniel, who asserts that birds killed with patent shot turn green twenty-four hours sooner than when it is done by common shot. In this latter case the increased tendency to putrefaction is attributed to the copperas, which is said to enter the process of making the patent shot. We have heard something of this before, but we paid little attention to it; nor even now can we see how either of the vitriolic sulphates can hurry the putrefactive process. If, however, it can be proved, that in the new patent shot the copperas is left out, we may then be inclined to consider these opinions as proved.

2494. *The new patent shot* we believe to have been the invention of the celebrated Joe Manton; and, in the first instance, the character they bore was a very favourable one. It is supposed, and we believe now generally known, that mercury entered their composition. Our own practical knowledge of them is confined to a few trials only, when, our stock being expended, we returned to our old sort. They are smaller than those in common use, and consequently lie more compact, and therefore answer best, in the calibers of small guns, from their additional weight. It is also averred by Colonel Hawker, that "the game killed with this shot will keep much longer than when the common shot is used." Moreover, by the foregoing process, "the shot," he observes, "becomes as clean as silver to handle, or carry loose in the pocket; and that its friction, when firing, leads the calibers little or nothing in comparison to the old shot. An advantage, too, above all the others, I should not omit to mention, is, that in this shot the surface of every pellet is precisely alike, owing to a different process of manufacturing; which could never be the case with shot that had arsenic in its composition. This must, of course, tend to make the charge lie with more precision in the barrel, and consequently be more evenly dispersed in and round the object." (P. 109.) The new patent shot, notwithstanding all this, are not much in request. They are, however, to be obtained at Messrs. Walker's and Co.; and we recommend a trial of them, which we should ourselves also have made of them ere this, had not attention to this work kept us for the last few years confined to our study.

2495. *The patent drop shot* of Messrs. Walker and Parker, of the Patent Shot Tower, Lambeth, we hardly need observe, continue in considerable repute among sportsmen.

There are also other London shot manufactories; and likewise in some of our large provincial towns, as Newcastle, good shot are manufactured. The fact that the shot of the different manufacturers vary so much as they do, is very much to be lamented. On this subject Colonel Hawker tells us, that "an ounce of No. 7. from Messrs. Walker and Parker's, amounts to 341 pellets; and the same weight from Mr. Beaumont's (late Preston), 398 ditto, &c.; and in some places the numbers are reversed." The following is a list of the shot of Walker's firm, with their letterings, number-marks, and number of pellets in an ounce:—

A A	-	-	40	4	-	-	177
A	-	-	50	5	-	-	218
B B	-	-	58	6	-	-	280
B	-	-	75	7	-	-	341
1	-	-	82	8	-	-	600
2	-	-	112	9	-	-	984
3	-	-	135	10	-	-	1726

2496. *Mould, drop, or swan-shot*, are of large size; and are those usually employed for wildfowl shooting; they are thus lettered, and the pellets numbered:—

	No. of pellets to 1 oz.
L G	5½
M G	(hardly) 9
S G	11
S S G	15
S S S G	17

2497. *Dust shot* our Mentor has not condescended to notice, farther than that he "leaves the pleasure of using and counting it to those who recommend it." We, however, have ourselves proved its efficacy; for in a winter's day of frost and snow we fired a charge of dust shot up a narrow passage of about six feet wide, between two cornricks, where such a number of small birds of all kinds as are seen in farmyards during frost were settled, that we picked up between forty and fifty, the proceeds of one shot only. We can suppose a fastidious sportsman to turn up his nose, and exclaim, What a sportsman! But were he, like us, to be shut up during a long frost in an old-fashioned hall in the Essex Marshes, without a neighbour, save the farmer who tilled the ground around us, he also might be tempted to degrade himself by sporting among larks, sparrows, and chaffinches. Thus situated, we however think he might do it *sans peur et sans reproche*, and particularly if he were as fond "as ourselves" of a parrow pudding.

2498. *Effective sizes of shot*. These vary in the opinions of different sportsmen. Our grand gunner thinks that No. 7. is the best size for general shooting with a gun of the common weight and bore; and with this, he says, that, taking the seasons throughout, more game may be killed than with any other, "taking every thing from mallard and hare to quail and jacksnipe." There is pith in the colonel's reason why small shot answers best, when he tells us, that "it lies more compact in the barrel; and, consequently, receives more effectually the force of the powder than large shot, which can only have this advantage in a proportionably large caliber. Thus it is that a grain of small shot, from a small gun, will kill far better, in proportion, than one of large; and with it you have not only the chances multiplied in favour of taking a vital part, but the same advantage of penetrating feathers, that a pin would have (with a moderate pressure on it) over a nail; and its garnish must be so regular, that a bird, at forty yards, could very seldom get away; whereas the large shot, from the objection before named, will often fly so wide and irregular, that the game will escape between the void spaces in the circle." (P. 104.) He does not, however, deny, but that with Nos. 3. and 4. very long shots will be more effective. But how many more within reasonable distances do occur; and then the chances with large shot would be lessened by the diminished number of pellets: but all this must depend much on the fancy of the sportsman, and whether he shoots for pot, or for credit in the kill. For some time the use of smaller shot than heretofore has been becoming prevalent. Captain Williamson, in his *Oriental Field Sports*, vol. ii. p. 77. says, "One of the best shots I ever saw never used any other than No. 9." General Hanger, on the contrary, confined himself to No. 2. There are persons so dexterous that they can kill with almost any thing, and any how, if we may be allowed the expression; but we should not be pleased to be confined in October to shoot at our partridges and pheasants with shot of so small a size.

2499. *Larger sizes of shot are advocated by others*. Thus an acute writer in the *New Sporting Magazine*, who evidently favours rather large shot, argues thus:—"It has always been our opinion that every shot fired, from a dust-corn to a forty-two pounder, moves with a velocity and force in a direct ratio to its size and weight. If any person who has the opportunity will fire at a hard block of wood with various sizes of shot, he will find that a forty-two pounder ball will sink deeper into the block than a twelve pounder, a twelve pounder than a musket-ball, a musket-ball than a swan-shot, a swan-shot than a No. 1. shot, a No. 1. than a No. 4., and a No. 4. than a No. 9. Then if a No. 4. will strike deeper into an oak-board than a No. 9., why should it not into the body of a hare or partridge?" This may be very true, but it must be taken into the account that the vacancies in the gar-

nishing, when large shot are employed, are both more numerous and more extended than when the shot are smaller. The editor's opinion is, that a trial of the gun employed should have some influence in determining the size of shot used ; for it is unquestionable that some guns carry much closer than others. Let therefore thirty-five yards be considered as a fair average distance of the shots made. Now try various sizes of shot at this distance on a sheet of paper, and the largest size that will garnish, after repeated trials, so that a partridge could not escape, may be with propriety selected as the ordinary size to be used for that gun. For snipe-shooting, of course, some variation should be made. Mr. Daniel is an advocate for the use of shot of a very moderate size. He says, "The velocity of a charge of No. 7. being equal (Query) to one of No. 3. at that distance ; and since small shot fly thicker than large, in proportion to its size ; and as there are many parts about the body of a bird where-in a pellet of No. 7. will affect its vitality equal to a pellet of No. 2., the chances by using the former are multiplied in the marksman's favour ; for it is the number, and not the magnitude, of the particles that kills on the spot ; and if sportsmen would be persuaded to use Nos. 5. and 6. in grouse and partridge, and No. 7. in woodcock shooting, instead of Nos. 3. and 4., and Nos. 4. and 5. for black game and pheasants instead of No. 2. and 3., they would bring home one-third more game, and not destroy one head more than usual. They who prefer large shot, and accustom themselves to fire at great distances, leave nearly as many languishing in the field as immediately fall ; whereas those that use small shot, and shoot fair, fill their bag with little spoil or waste beyond what they take with them from the field." To an old gamekeeper of his (he tells us), he has often put the question, "Why he was so partial to small shot?" (for he generally used Nos. 6. and 7. mixed), and his reply was, "Sir, they go between the feathers like pins and needles ; whilst the large shot you use as often glance off as penetrate them." (Vol. iii. p. 454.)

2500. *The author of the essay on Shooting* declares his opinion on the subject in hand thus ; premising on our own parts, however, that we have altered his numbers of the shots to make them correspond with the schedule of Messrs. Walker and Parker, as given at p. 765. :—"In the first month of partridge shooting shot No. 5. should be used ; for since, at this time, the birds spring near at hand, and we seldom fire at more than the distance of forty paces, if the shooter takes his aim but tolerably well, it is almost impossible for a bird at this distance to escape in the circle or disk which the shot forms. Hares also, at this season of the year, sit closer ; and being at the same time thinly covered with fur, may easily be killed with this sized shot, at thirty or thirty-five paces. In snipe and quail shooting this sized shot is peculiarly proper ; for, in using a larger size, however true the sportsman may shoot, yet he will frequently miss ; the objects being so small, that they have great chance of escaping in the vacant spaces of the circle or disk. Yet there are many sportsmen who shoot snipes, quails, and fieldfares in countries where they abound, with sizes 6. and 7. of the common shot, the last of which is called mustard-seed. About the beginning of October, at which time partridges are stronger on the wing, No. 3. is the proper shot to be used. This size seems to be the best of any ; it preserves a proper medium between shot too large, and that which is too small ; and will kill a hare from the distance of thirty-five to forty paces, and a partridge at fifty, provided the powder be good. It will serve also for rabbit shooting. In short, it is adapted for all game, and many sportsmen use no other the season round. It is true that distant objects are frequently missed for want of larger shot ; but then these bear no proportion to the number which are daily missed, by using shot of too large a size, especially with the feathered game. If a man were to shoot constantly with shot No. 1. for one partridge which he might chance to kill with a single pellet, at the distance of eighty paces, he would miss twenty birds at fifty paces, which would in such case escape in the vacant spaces of the circle. But if the sportsman expressly proposes to shoot wild ducks or hares, then, indeed, he had better use the No. 1. However, in shooting with a double-barrelled gun, it may be prudent to load one of the barrels with large shot for the necessary occasions ; and if in any case large shot is required, No. 1. will be found to be better than any other ; for its size is not so large as to prevent it from sufficiently garnishing, or being equally spread in the circle, and it can at the same time perform, in effect, all that a larger-sized shot can do, which garnishes but very little, if any at all." Were we to introduce many other quotations from authorities before us, they would tend more to show how widely opinions will vary, than to settle those of others. Let the sportsman, therefore, who feels much on the subject, seek the information he wishes for in the wide field of experiment and observation. We have stated the outlines, let his own practical remarks fill up the blanks. The gun he shoots with, the country he shoots over, his own methods of shooting, whether very quick or very deliberate, will all of them tend to contravene any fixed rules or principles laid down.

2501. *Mixed shot.* Some persons would by no means use two sizes of shot together ; and we were equally hostile to it, until, by shooting with some excellent sportsmen who purposely mixed theirs, we were induced to try a mixture, when, we must own, we could discover no difference in the effect. Mr. Daniel informs us that his uncle, "who was allowed to be

one of the best marksmen of his time, after minute trials and mature experience, preferred it to every other kind." Gamekeepers," he continues, "frequently use it; and many persons in this class are in the habit of trying and knowing what shot will do most execution, and are men who generally draw their reflections and remarks from actual and successful experiment. It is true they do not write a treatise upon the subject; yet, from killing game and animals at all times, are at least as likely to form a just decision as gentlemen, who, for the most part, only use their guns three months at the commencement of the season. The numbers of shot proper to be mixed together for general use are 4, 5, 6, and 7." (*Rural Sports*, art. SHOT.) There, however, remain many judicious gunners, who decidedly object to mixing their shot, though, as already observed, we are inclined to think it is not injurious to either their range or garnishing; nor do we believe any law in projectiles can be brought forward to prove its impropriety. The mass of shot is propelled by the expansive power of the powder; it is ejected in a mass; and, when it separates, each shot carries with it its own share of ejective force, with very little interference with any other, it being evident that the projectile force acting on each shot is in the proportion of its area of dimensions.

2502. *Patent shot-cartridges of Eley.* We presume we need not inform the reader that the use of paper cartridges, made somewhat after the military fashion (except that the latter are charged with ball, but the sportsman's with shot), have been long used by some persons; but they were too uncertain in their action, particularly in their delivery of the shot, to come into general use. The history of Eley's patent shot-cartridges, as related by Colonel Hawker, is an amusing one, and exhibits this gentleman as an active agent in bringing them before the public. (See his work on *Shooting*.) The original projector was a Mr. Jenour, who sold the invention to Messrs. Eley; and they for some time maintained a large establishment for the manufacture and sale of them in Charlotte-street. The cartridges, however, had not then attained due perfection. Imitations were abroad also; and, finally, the establishment was broken up, and the concern sold, as it is said, for a hundred pounds, to Purdey the gun-maker. Colonel Hawker appears to think very highly of these cartridges in their improved state; and without doubt, for some varieties of shooting, they are excellent auxiliaries, particularly they are so for long shots. The principles on which they are formed consists in confining the shots within the meshes of a net of wire gauze, so managed, that in the flight of the cartridge they may separate from it by degrees in their passage. At first the wire employed was much too stiff, and the meshes of the purse too small; by which means the charge was either delivered in a dangerous mass, or otherwise it was too scattered, *i. e.* partially and ineffectively only. An inconvenience attended the very few we have used, which was, that, after a few shots, they did not pass pleasantly down the barrel. A morsel of tallow however, smeared on the outside, remedied this; but the smallest delay in the field is annoying. For wildfowl shooting they are very useful; and for rook shooting we have likewise found them so. They are also much patronised by some pigeon shooters; indeed, we believe they are their best friends. Colonel Hawker's account perfectly coincides with our sentiments regarding them, and with that also entertained by several experimental sportsmen of our acquaintance. "For general shooting," observes the Colonel, "and particularly close shots, it is totally out of the question: it increases tenfold the difficulty of killing the object when very near, and spoils the birds when hit; and is, of course, dangerous for covert or battue shooting. Let me, therefore, conclude with recommending my sporting friends not to adopt the cartridge for general shooting, but only to make use of it on particular occasions." (*Ibid.* 7th ed. p. 112.) Greener would prefer the shot being surrounded by some other medium than wire, as felt hatting, &c. He observes on them, very justly, that "there is one point which must not be lost sight of in using cartridges. If you load with as heavy a charge of powder as in general shooting, their effect is trifling compared with what it is with a moderate charge. The shot droops considerably more; therefore you must have an increase of elevation, or you will invariably shoot under your object, at any distance above forty yards." (*P.* 177.) These cartridges, it must be remarked, are certainly gaining ground, and particularly among pigeon shooters, and for all long shot distances and bulky game. We would, however, recommend the reader to a very full *exposé* of their properties, stitched up with the *Sporting Magazine* for July, 1838; and also to a very able and fair examination of the pretensions of these cartridges in answer, by a writer in the *New Sporting Magazine* for September, 1838. We would ourselves remark, that if they do not and cannot do all that the vendors state — and what article is there that does do all that is promised for it? — yet they certainly do increase the means of destruction in the hands of the gunner, and consequently they have a fair claim to public patronage. They are now sold at 36. St. James's-street, Piccadilly, where full directions of the proper weights for certain caliber of barrel, as well as the sorts adapted to certain varieties of shooting, as moor-fowl, partridge, snipe, wildfowl, &c. &c. are laid before the purchaser.

2503. *Shot-belts, steel-chargers, &c.* are necessary means of carrying the shot; or would you, good reader, prefer the boyish method of a bag, and the smoke-dried bowl of an old pipe,

wherewith to measure the shot that was to bring to bag, or rather to pocket, the starlings, thrushes, blackbirds, &c. which the winter holidays allowed you in youthful days to hunt up. To this day the recollections of these pop-gun excursions excite pleasing feelings, as the so-called "sparrow pudding," made of our humble game, gratified both our taste and our self-admiration. We have worn a double shot-belt for many years; and were we to begin life again we should, as we now think, never carry shot in any other manner. We commonly used one of the double kind, as it would carry two sizes of shot; but if there be much distance to traverse, and no servant attends, you may take two shot-belts, and cross them, which will greatly lessen the fatigue of carrying. Always sling the belt between the jacket and waistcoat; it lessens perspiration, and protects the shot from wet: it also allows of ready access to your shooting pockets, which should be an under and an upper on each side; at least such was our own method. Some wear the shot-belt buckled moderately tight round the waist, and on some occasions we have done the same, and with less fatigue than by the usual method. In purchasing a shot-belt choose one with the self-charging spring top; it graduates like the rest.

2504. *Waist shot-belt.* When the shoulder shot-belt proves oppressive, it will be found convenient and less burthensome to have a belt affixed to the waist, with numerous partitions



SHOT CHARGER BELT.

385 ranged along it. Into each of these thrust a charger, which being double, and the belt affording six or seven compartments on each side, will give you stowage for near thirty charges. We have occasionally worn such a shot waist-belt, and found it no otherwise inconvenient than as it heated us, and somewhat added to the weight we carried. We should prefer brass to steel chargers; they are much lighter, and wholly unattractive to lightning, and are also little liable to rust. Colonel Hawker, as we see, is more partial to the shot-belt than to steel chargers; and, as is usual, he gives reasons for his preference, as a reference to his work will evince. We cannot avoid, however, showing up, in his own words, his initiatory lesson on the method of using the shot-belt, first observing that he patronises the tube-pipe belt of long standing:—"While pressing the spring with the forefinger and thumb, draw the top just out; then take a fresh hold over handed, so as for the first finger and thumb to steady the muzzle of the belt, and the second finger to be just within the ridge of the top; and by closing the second finger a little, the top will be sufficiently drawn out. The instant you have taken this fresh hold, lean the body, with a little jerk, to the right, and the shot will fill the top, of which your second finger will have such a command that none will be spilt. Before you put the first measure into the barrel, lean a little to the left, or the shot will pour out of the belt; and in loading your second barrel, you must observe the same motion of the body to the right and left. In doing all this, the left hand should never be taken from the gun. Be sure always to keep the spring inwards, and have your shot top made rather longest in the part which comes under while filling it." (*Instructions to Young Sportsmen*, 7th ed. p. 126.) Many others prefer the belt with a spring mover, that allows the affixed mouth-piece to be filled, and closing, leaves nothing more to do than to reverse the belt over the mouth of the barrel; by this the shot-belt and charger never part company. Another variety, on nearly a similar principle, has a distinct pipe to pour the shot into the muzzle. The force of habit is great; we knew a worthy farmer, who shot over his own manor farm: no argument on the inconvenience and loss of time that it took, with the bowl of a tobacco-pipe to charge his gun from a canvass bag, could avail to persuade him to use a shot-belt. "No," he said, "it was all boyish nonsense; his father and his grandfather had always done so, and he did not see how he could do better." This was his *argumentum ad ignorantiam*.

SUBSECT. 8. *Copper-caps, cap-chargers, &c.*

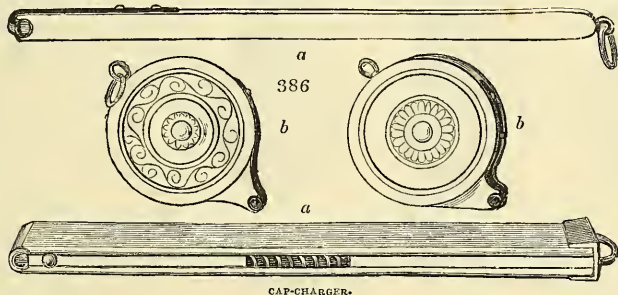
2505. *The copper-cap* has now established itself so fully, that it may almost defy opposition. It had however much, and indeed deserved, opposition to encounter at its outset; not, as we are informed, from any fault in the inventor, but from that of the Birmingham agent, who served the public with caps manufactured from brittle cannon-metal, instead of the best copper; by which fraud a very frangible article was substituted for what was intended to be tenacious and ductile: and, as we are informed, it was to this cause that the numerous serious accidents, which occurred by the early use of copper-caps, are mainly to be attributed. The French copper-caps are also extensively used, and they are by no means in their present improved state objectionable, though certainly not equal either in certainty or safety to the best of those of our own manufacture. Colonel Hawker is, we think, rather too severe on the French copper-cap, when he states that, "though these may do very well with weak French powder, yet they are so unfit to be trusted with our

powder, that the loss of many a sportsman's eyes has been the consequence. I know one gun-maker who recommended them for no other purpose than to ruin the copper-cap guns, and thereby improve the trade for primers."

2506. *The anti-corrosive property of the fulminating mercury now in use*, in comparison with the former article compounded of sulphur and chlorate of potass, is a most important improvement, inasmuch as it prevents those corrosive effects so much complained of heretofore on the pivot, and also on the gun passages generally; and, indeed, as it supersedes the necessity of that extraordinary care hitherto required. It is, however, prudent to keep an eye even yet to the igniting apparatus generally, and to clean the passages frequently. It is likewise very necessary still that the copper-caps be carefully excluded from damp, which weakens, and eventually destroys, their detonation. In the purchase of copper-caps, whether in large or in small quantities, it is always prudent to try one or two promiscuously chosen from the mass, otherwise disappointment may occur. This caution particularly applies to foreign caps, which, however good at first, if long kept in a storehouse, will lose their quickness of ignition. Be equally careful that those bought are cupped to the exact gauge of the diameter of your nipple. If they are too small they will not explode; if too large you are liable to have the cap of the second nipple fly off when the other is fired. Mr. Joyce and Mr. Walker are, we believe, the most accredited makers of the English copper-caps.

2507. *Iron percussion-caps.* Mr. Greener, in a communication made in the *New Sporting Magazine*, No. lxxv. remarks, on what he considers an inconsistency in the inventors of the cap, which was the preference given to copper instead of iron, for containing the percussion priming powder; to which error he attributes the tendency in the copper-caps to become injured when exposed to damp to such a degree, as to be converted into a paste incapable of ignition. He says, "Whenever powder is flashed or exploded around the nipple of a gun, the residue left attracts moisture instantaneously. It follows, then, that (after recharging) this damp on the nipple coming in contact with the copper of the cap, creates an instant galvanic action, which, if allowed to act for an hour or two in damp weather, does not fail to effect a considerable decomposition of the fulminating mercury with which the cap is primed; and hence the misfires." (P. 350.) To remedy this he recommends the use of iron as a substitute cap for the copper, on the principle that being then of the same nature as the nipple, it would render such caps antigalvanic. Mr. Greener informs us he has made such iron caps, and has tried them, and that many others have done the same with the following results:—"They are much easier exploded, they detach no broken particles to wound the shooter, nor even expand so much as to stick in the head of the striker. They do not stain the hands, and they might be made cheaper." If such be really the facts, and no draw-backs are proved to countervail these advantages, iron caps will eventually be brought forward.

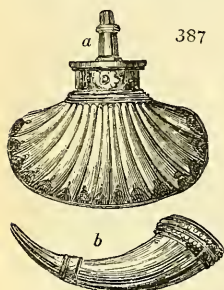
2508. *The cap-charger* (fig. 386.) forms a very useful appendage to the cap system. It is of French origin; and was, we believe, first imitated and introduced among us by a



Mr. Sykes. There are several varieties of cap-chargers, some long (*aa*), and some round (*bb*). The latter we think preferable, because they are the most convenient, it not being necessary, when using the round one, to put the lock to full cock before you can introduce the cap to the nipple, as is the case when the long one is employed. Greenfield's cap-charger is also by no means an unpleasant one, nor inconvenient to handle. Brownjohn, of Basingstoke, has one likewise for which he has a patent; and it appears to be much patronised in the southern and western counties, and consequently must have merit. Colonel Hawker notices one also, invented by his friend Captain Ward, which is remarkable for a piece of ingenious mechanism, in the shape of a dial-plate, which tells the number of caps that remain, and consequently also the number of shots that have been fired. The curious in these matters will find other varieties, as Greenfield's, &c. &c.; but the names noticed are, we believe, the principal. In our own shooting practice we always carried our caps in a

small breast-pocket on the left side of our shooting waistcoat, from whence one was readily extracted, and as readily transferred to the pivot. Be it observed, however, that it is only a few for immediate use that should be thus carried; on the contrary, the bulk of those taken out should be kept in a metal box closed by a fine wormed screw cover, so as to be impervious to wet or even moisture. We do not hesitate to assert that, although we ourselves did not use one, yet a cap-charger of some kind or other should be employed; but let the seller instruct in the use of it, which will be better than a written discussion. The stock of caps, for we will suppose them to be bought by the thousand, ought to be kept in a very dry and unexposed situation.

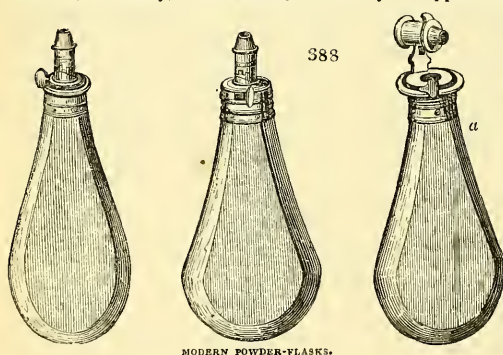
2509. *The powder-flask* has always been an important article with the sportsman, but it is not now, as formerly, made of monstrous dimensions, and splendidly decorated, to assist



POWDER-FLASK AND HORN.

the group of olden sporting implements that graced the halls of the ancient baronial mansions. Of such a flask, *a*, fig. 387. is a representation, the capacity of which we presume was equal to contain four or five pounds of gunpowder; which quantity, we may suppose, was not too much to satisfy the necessities of an olden hunting party, considering the numbers usually engaged. Its humble companion, seen underneath on the same cut (*b*), represents what was long used under the name of the *powder-horn*, from its being at that time formed from the horn of a cow or bull, to the larger end of which either a wooden or horn bottom was fitted, the smaller end being furnished with a tip of horn also, which screwed on, and, being hollow, served equally for a powder measure when off, and a powder stopper when on. Even this humble article admitted of considerable decoration, and we have seen some very elegant tipplings below, and equally costly ringlets around the screwed extremity, as represented in the cut. Some will also recollect another real powder-horn, but shaped like the copper flask. It must have been manufactured from a thin sheet of horn.

2510. *The modern powder-flask* is sometimes made of very stout leather, but more frequently, and certainly more judiciously, when composed either of zinc or copper: in which latter cases we see it either plain or embossed, and it is finished off after several methods, as safety, convenience, or beauty of appearance, are to be principally studied



MODERN POWDER-FLASKS.

(fig. 388.): not but that some combine all these requisites; safety, however, should be the first consideration; for many lamentable accidents have happened by the whole contents becoming exploded at once; and which nothing can insure against but completely cutting off the passage between the powder separated for the barrel, and that which remains within the flask. Many inventions are before us that promise this. Lang's patent flask is one of these, and it certainly is an ingenious, and to all appearance an effective, contrivance for the purpose. Mr. Sykes and Colonel

De Berenger have each brought forward safety powder-flasks, which may be seen at most gun-makers. We have not ourselves seen the flask of the latter gentleman; but his well known ability is a voucher that he would bring nothing before the public that was not effective. Mr. Sykes also has, by some judicious alterations, so improved his flask (*a*), as to warrant a recommendation of it for its efficiency, convenience, and moderate price. It remains to add, that whatever flask is used, it should be so formed as that the neck, by sliding within another tubular portion affixed to the body of the flask, will measure out three or four different quantities of powder; and, according to the gauge of your gun, set this measure, first however having weighed these several quantities, which, if not already done, should be engraved on the movable tip or measure.

SUBJECT. 9. Gun Wadding.

2511. *Gun waddings* are as varied as most of the other gun appendages. One advocates leather, as Mr. Daniel; while Colonel Hawker objects to it, and very justly, because it is not stiff enough, unless so thick as to be both expensive and dangerous. We however

cannot altogether coincide with the colonel on the superiority of card wadding ; for not only is it in our opinion too thin, but the crown of the ramrod employed should be three-fourths of an inch wide, to prevent the possibility of the card passing down edgeways. Colonel De Berenger recommends hat, coated on each side with printed paper, as a good wadding ; and if, instead of paper of a slight texture, cartridge paper were substituted, we are of opinion that a good wadding would be gained. Whatever wadding is chosen, the gauge of the barrel should be kept in mind ; and also a stiffer wadding should be employed for a large than for a small bore ; at least some difference should be made when the proportions vary much. It really is essential to comfort as well as to safety, that whatever wadding be used, it should exactly fit the barrel ; *i. e.* that in passing it down the barrel it should require a moderate, and only a moderate, pressure of the ramrod to force it down. It is the difficulty of obtaining an exact fit that is the grand inconvenience in purchasing any of the ready made waddings. Many of our best sportsmen, therefore, have a wadding punch made for each gun ; and they show much judgment in so doing. Colonel Hawker, with that convertibility of talent, and that minutiae of detail which marks most of his instructions, directs us how to alter the punch used, if it be not found exactly to answer the purpose. When too large he recommends to bite it a little edgeways ; and when too small, he says it may be enlarged by being rubbed on a whetstone. (See p. 115. 7th edition.) It is common to use lead to punch on ; but as we found it injurious to the punch, we used some close grained wood, which answered our purpose better. Let a wooden block be firmly placed, presenting so large a surface as that it may not become worn into cross ridges, which will prove unfavourable to either the scraping or planing of it when it becomes necessary to regain a level surface ; for without the block be level, the wads will not be cut clean.

2512. *Different waddings* certainly have different effects on both the range and the force of the delivery of the shot, although many unreflecting persons are impressed with an opinion, that so the powder and shot are separated, and the charge retained in its place, it matters not how or by what means it is done. The reflecting sportsman, and particularly the experimentalist, is commonly of a very different opinion. The author of the essay on *Shooting* attaches the principle importance to the powder wadding ; we attach it equally to both. Of the powder wad he observes, " It should be quite close to the barrel, and that without being rammed too hard ; the wadding should therefore be of a soft and tractable material, but at the same time of sufficient consistence to carry the shot in a body to a certain distance from the muzzle of the piece. For, if the wadding is rammed too close, or is of a hard and rigid substance, such as stiff brown paper, the piece will recoil, and the shot will spread more wide : if, on the contrary, the wadding is not sufficiently close, and is composed of a slight and too pliant material, such as wool or cotton, it will not be of sufficient consistence to carry the shot, and the discharge will lose its proper force. Besides, a certain portion of the shot, which is more immediately in contact with the wadding, will be melted by the explosion of the powder." (P. 203.) We cannot, however, agree with this ingenious writer, in recommending " either brown paper or dry moss as substitutes, when hat is not to be obtained." Something is required that will retain the elastic fluid within the powder chamber until the pressure extends to the shot bed, and until the body of shot begins to move also. It is now that we can perceive the value of that wadding, which, by its texture and firmness, can not only resist the disgregation of this force, but is also able to keep it united until the grand expulsive effort has carried the whole out of the barrel. We think that this consentaneous action and its effects must be clear to every reflecting mind ; and, if so, will not the advantages of a proper wadding and true cylindrical boring of the gun-barrel be apparent ?

2513. *The powder wadding used in charging a gun*, therefore, is by most writers recommended to be of considerable firmness and sufficient thickness. Mr. Greener says, " A substantial wadding between the powder and the shot is equal to a considerable artificial friction in improving the strength with which the powder expels the shot. It answers the purpose of completely preventing the explosive matter becoming mixed with the shot ; and the powder is confined the same as it would be were there a ball in the barrel that fitted tight. Thus the whole force is properly exerted." (P. 173.) That wadding which is over the shot he appears to hint need not be so substantial. It is with much diffidence that we dissent from this great experimentalist ; but we fear that an unsubstantial wad over the shot, particularly of a double gun, would be apt to loosen, and thus engender accident. For many years it has been, as already stated, our own plan to employ Beckwith's felt wadding, which we used in the following manner,—instead of putting a whole one over the powder, we divided one into two, and applied one of these halves over the powder, but a whole one over the shot ; and, after many trials, this proved with us the best means of wadding the piece : it occasioned little recoil, not much fouling, and a sufficient range and regular delivery of the shot. We are perfectly convinced of the propriety of a complete separation of the powder from the shot, which the half of a well fitting

wadding, of the kind we have pointed out, effects completely. This saving of substance also produces another important advantage, by allowing the shot bed to be lower down in the barrel, where its capacity for resistance is greatest ; nevertheless, candour obliges us to own, that many experimentalists prefer a thick wad over the powder, and a thinner over the shot, and this method they pursue to increase the range ; and it may do so with some guns, but we could not find that it had this effect when we so used the wadding. We always employed a double gun, and by the use of these waddings, after the method we have just remarked on, we never had occasion to ram our shot a second time in the unfired barrel ; and if to the edges a little mercurial ointment were added, we should, think them then as near perfection as they could be. Even were the effect of a thick powder wad all that is stated, we would nevertheless recommend that a firm one, both as regards its elasticity and substance, be placed over the shot, to avert the fearful consequences that ensue from the displacing of the charge. We are, however, of opinion, that the half of one of Beckwith's is all that is required between the powder and the shot.

2514. *Walker's metallic gun waddings* are much in repute, and much stress is laid on the supposed effect of their metallic edges, in preventing the surface of the barrel from becoming leaded. They may do so in a certain degree, but when the intensity of the heat surrounding the shot during the ignition of the powder is taken into consideration, it must be evident that some fusion of the outer surface of the shot must take place, and therefore that, in their exit, they must leave a slight coating of lead on the barrel at each discharge. These waddings, however, would be improved were they more elastic, by which the shot in the second barrel would be less likely to become disturbed. To this elasticity in very thick felt we attribute the perfect security we have experienced in our sportings. The inflexibility of Walker's wadding renders them troublesome to use, as thereby they do not readily adapt themselves to every barrel ; for, however barrels may be gauge-marked, there will almost always be found a little difference in size of caliber between two guns, although bearing the same stamp ; consequently, if the stiff wadding do not already fit to a mathematical nicety, it either does not hermetically seal up the barrel, or its charge will not pass easily. These inconveniences are not felt in using either Joyce's, Wilkinson's, or Beckwith's wadding, which may be forced down a barrel smaller in diameter than that of the wadding. There are many other waddings in the market, as those of Purdey, Nocks, Eley, &c. Eley's wadding we believe to be made of cork, and, like all novelties, is under trial, as is also what is called sponge wadding, professed to be made of the same material with Cherry's horse feet pads ; and report speaks well of both.

2515. *In the use of waddings of any kind*, our former notice should be kept in mind, that, where there is no vent-hole to the breach a resistance is offered to the descent of the wadding, and that the powder is liable, in the attempts to force the wad down, to be either pressed or disturbed. It also happens that some considerable impediment is experienced to the passage of the shot wad of some of the kinds in vogue ; in which case it must be borne in mind, that a small hole, made in either or both of the waddings as the case may be, will obviate the inconvenience. Some punches are indented purposely to allow of the windage passing off, or a hole is made in the centre ; but we never found either of these necessary when using the concave wadding of Beckwith : notwithstanding which, we recommend to the reader's notice the waddings of Purdey and Lancaster, cut with a dented punch, and anointed with mercurial ointment (as we take it to be) around the edges. These waddings prevent resistance from confined air, and also somewhat obviate *fouling* in the barrel. Westley Richards's wadding, likewise started by Bishop, is become very popular, and has proved very effective. We cannot conclude this article without again adverting to the important subject of *wadding*, as regards the placing of it. We confess to be at issue with most of the authorities of the present day, who advocate a *close and thick wad over the powder*, which to us appears not only unnecessary, but also in some measure dangerous, by removing the shot-bed farther upwards in the piece than is consistent with safety. We acknowledge the necessity of the powder wadding being of sufficient substance to force forward the shot in a body, which it will be if firm felt of only a moderate thickness is used ; whereas, when card is employed, by allowing windage between it and the powder, it will not propel the shot either so forcibly, or to so great a distance, as when so elastic matter as felt is used, which, by adhering to the barrel closely, prevents any windage, and consequently any flame escaping past the shot, and thereby dispersing them by its lateral expansion the moment it quits the barrel. It is therefore necessary that a wad of only sufficient consistence to prevent the expanding flame from insinuating itself past the shot be used, which a felt wad, such as we have described above, is fully equal to. Any accumulation of expansive force occasioned by a thicker powder wad is at least useless, if not dangerous. It is our opinion that the whole charge should be kept as compact as possible, as acting least offensively on the gun, and most effectively on the object fired at, by hindering any scattering of the grains previous to their simultaneous inflammation. It is to prevent this that the prize shooters wrap up small quantities of shot in tow, or silver paper, so as to leave no interstices among the grains.

SUBJECT. 10. *Shooting Habillments and Appurtenances.*

2516. *The sporting gunner accoutred for the field*, whatever peculiarities may mark his dress, is always an object of interest to others of the same class as himself. Our exemplar



SPORTSMAN ACCOUTRED.

(fig. 389.) presents an unpretending figure of one simply but conveniently clad; he also, as may be supposed by his sporting one barrel only, is a disciple of the old school, who many of them considered the work of destruction sufficiently great with one barrel, when that one was daily employed throughout the season. Our field sportsman presents himself armed for conquest, not only over the game he may meet with, but against the weather he may encounter; and, without being burdened, he is amply protected. Ease and safety ought to be the grand objects when we are choosing our shooting clothing. We will leave the West-end tailor to cut his jacket into any monstrosity of taste he pleases, but he will never beat the long used fustian jacket, with its breast pockets within and without, and its wide-spreading skirts pocketed within, to contain a hare or two, and those without to hold partridges, but the skirts must be longer if he mean to carry all he kills. The old game-bag, we need not say, is almost discarded. The hare pockets, we have forgotten to state, should have an oilskin lining, to prevent blood from transuding through the dress. We have seen this lining made loose; and we have seen, instead of an oilskin lining to the pocket, an oilskin button holed around, so as to hang within the jacket pocket by means of buttons

corresponding with the button holes. By this contrivance the pocket could be wiped out, hung to dry, and all taint avoided. We would avoid a single drop of blood on our clothing, if possible, because some youthful sportsmen, to raise a stare, will purposely smear themselves and clothes with it. If you are tall let your waistcoat have three, but if short, only two, tiers of side pockets. What with two varieties of waddings, loose caps, or cap-charger, gun knife, perhaps snuff and cigars also, with sundry other necessary implements, you will find the number we have pointed out all taken up. The powder-flask, and perhaps the *eau-de-vie* case, will occupy a compartment on each side of the jacket, and various other indispensable oddments will not leave an hiatus in your upper man. If you are on the wrong side of forty, let the weather be what it may, wear both flannel waistcoat and flannel drawers. The flannel may be as fine as you choose, but by all means wear it; and, be assured, it will at once keep you cool by being a nonconductor of heat, and save you from cold by absorbing perspiration. On the right side of forty, do as you please in these matters: the professed gunner, who shoots through the whole practicable year, *i. e.* all the game killing months, should have his autumn, his winter, and his wildfowl dress, or, as we may term it, his foul weather dress. The first may be made of any quiet coloured material he pleases, as drab-coloured nankeen, setteen, jeanet, or florentine; the second of barragan, fustian, or florentine; the third of well lined velveteen, and be it remembered to have duplicates of each, with waistcoats to match. Wear laced half-boots, with gaiters to reach above the knee, in which case the breeches will require no capping; but if the gaiters do not reach above the knee, let the trowsers be either lined within or without with leather over the knees, to ward off the thorns in making your way through cover. We have to add to our directions as regards the boots, that they should have been made some months at least before wearing, that they fit easy, and are strong without being clumsy. They also should have been many times oiled, and afterwards well dressed with any of the usual preservative mixtures in which wax and resin are components. Be it likewise remembered that lambs' wool stockings are more easy to walk in than either thread or cotton. Further, should the sportsman have tender feet, let him rub them well over with soft soap in sufficient quantities, and he will be likely to prevent galling, however otherwise used to it. But should blisters rise in spite of this caution, by no means let him open them after the usual method, as is frequently done; but having armed a small darning-needle with moderately coarse worsted, let him draw this through the blister; having so done, let him cut away the needle, leaving the worsted within the blister, which in the morning will be dried up, and the field may again be taken. Avoid swallowing cold water when you are yourself hot, but rinse the mouth with it, which will refresh. If very thirsty, slake it with tepid water, in which two or three tea-spoonfuls of brandy are infused; but avoid taking spirits of any kind alone, as unsteady the hand, and producing more speedy exhaustion in proportion to the present exhilaration. These minute instructions are not intended for the adept and old practitioner in the field; on the contrary, we beg he will pass them over, although they

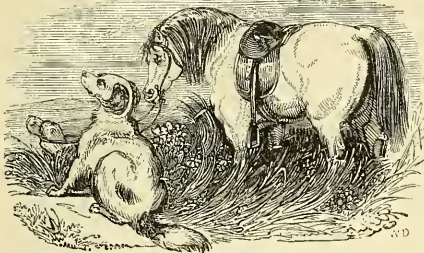
are edited by one who has been an enthusiast of the trigger for forty years. Or, in lieu of it, if he would correct the faulty, and enlarge the good, we shall be most grateful. But to the young aspirant for fame in shooting practices, they may assist towards his comfort, and may prevent that laugh against him which he would be sure to encounter, were he to sally out in a costume inappropriate to his pursuit. While we should prefer sober colours for every part of our own shooting habiliments, we feel that no necessity whatever exists that his dress should studiously harmonise with the objects around him, or the locality he enters. And while we recommend, that, as far as the timid and cautious grouse are concerned, whose quick vision enables them to discover danger probably two miles ahead, that the whole clothing should partake of the tint of the heather ; yet at the same time we are convinced, that, as regards partridges, pheasants, hares, quails, &c. the sportsman's dress, be it what it may, they know he is a man, and they know him as an enemy, and conceal themselves from him accordingly, until, being pressed on, they take foot or wing as suits them. If there be any virtue in sober clothing, in facilitating our approach to partridges, &c. it must be because they see the husbandmen, whose dress is of that kind, so often pass without molesting them. To those over cautious sportsmen who are sticklers for dresses of a colour that will exactly harmonise with the objects around, we hint that they perhaps may choose something of the *nankeen* colour for the *stubbles* ; and, as it is very likely the flight of the partridges from thence may be into the coleworts or turnips, an attendant might be at hand to throw a green mantle over the shoulders of his master ; having also another of an autumn tint in readiness, in case their next flight should carry them into the wood ! But, joking apart, the colour of the shooter's dress, provided it is of a sober tint, is of little importance. We have hitherto principally addressed ourselves to the sporting public, who, like ourselves, wish to enjoy what is understood as shooting without alloy. By alloy, we mean the drawback on our free exertions of gamekeepers, markers, relays of dogs, &c. &c. We have been so circumstanced a few times in our lives, and even suffered the misery of having the game found for us, the ready charged gun put into our hands, and the fallen bird brought to us, not from the mouth of the pointer who stood to it, but from that of the keeper's retriever, who was in waiting to do these and other biddings. We object not to auxiliaries on the moors ; and where the footing is not good, horses are useful : attendants there are likewise somewhat necessary, as well as relays of dogs. In wood shooting, also, assistance is often convenient ; but it can in most cases be dispensed with. Give us, however, a brace of good dogs and one steady companion, and we ask no more, be it where it will : all beyond this is a tie, at least it is so to us.

2517. *Field apparatus.* We consider ourselves as addressing the zealot, who, to enjoy success, must feel that he has earned it. When we even had a gamekeeper at command, we usually went out alone to enjoy our sport, without the restraint the company of these persons usually generates. We have no cynical pleasure in being alone, but the contrary, and occasionally we were accompanied by a friend or two ; but it would have been an insupportable tie on us to have been followed by these subordinates, who, if better shots than the master, are not sparing of their remarks, perhaps their gibes or sneers, and at best their condolences. We likewise feel assured that there are thousands of sportsmen who think the same. It is for the true lover and sterling workman at his sport that we now write, and to such we now further address ourselves, and enumerate what is essential for them to take out with them. Gentlemen, we hardly need to remind you to carry shot, powder, and wadding, with caps, or flints, as the case may be ; and if you cannot burden yourself with an oilskin covering for your whole gun, you can at least take a lock cover, which shall completely secure it from the hardest rain. You should, beside what is already noted, have nipple-wrench, gun-picker, turn-screw, probe, &c. ; all which may be taken separately or together in a sporting knife. A sample of one is now lying before us, made many years ago, and which, as it offered some novelty of our own ordering, besides the usual articles common to sporting knives, it attracted some attention. The flint-gun artists must at times have encountered some trouble, and not unfrequently a wounded knuckle, from the want of a steady purchase, which the old turn-screw at the head of the knife could never present. This we removed to the back of the knife, where, bedding itself within a cavity purposely made in the horse-picker, it was safe from giving or receiving injury, and was then effectively placed so as to afford all the purchase that was wanted, without incurring danger from losing its hold when the screw which tightens the jaws of the flint cock had to be moved. A cavity in the handle contained a lancet, which in hot weather is sometimes wanted to open a vein in a pointer or setter, when heat or over exertion have brought on a fit. A fleam also, a punch, a gun-picker, a horse-picker, a button hook and nail file, with a strong blade and a pen blade, all of the best materials, were all included in it. This knife was made to order, and we paid 25s. for it. At the present time a knife, with the principal parts of this apparatus, may be bought for less than half the money ; but even this disproportion does not equal that which is found between the quality of the goods then manufactured and those now foisted on the purchaser. Thus it is also with our guns ; they must be made cheap, and yet must *look the thing*, which they certainly do ; but of course this can only be really effected by making the articles of inferior components. We have said nothing about the spirit flask, sandwich box, &c. ; these must be *ad libitum* ; and they

likewise, with other *additamenta*, depend on circumstances — as the proximity or the remoteness of the shooting ground from the domicile or headquarters. If you have these *addenda*, you will probably require an attendant; and in such case it would be well that you took with you some gun-cleaning apparatus also, which will render your evening shooting more pleasant and more effective.

2518. *The shooting poney*, as it is usually called (*fig. 390.*), whatever may be its height, is a very valuable adjunct to the lame, the lusty, and the elderly shooter; and also to every

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SHOOTING PONY.

one who has to go and return from distant shooting ground. The shooting horse is so well described by that very respectable writer, Mr. John Lawrence, that we shall make use of his quaint though expressive words instead of our own: — “They who are as soon fatigued by walking as the present writer, will readily appreciate the convenience of a good shooting galloaway or pony, the material qualifications of which are as follows: to stand fire like a gatepost, and be a perfectly safe goer over all kinds of ground, particularly down hill; a good canterer and walker; a handy

and safe standing leaper; one that shies at nothing; that will follow readily, may be turned adrift, and easily caught again; fully master of the weight he has to carry, and with a good share of that common sense, apprehension, and steadiness about him, which is often to be found in brutes.” (*British Field Sports*, p. 87.)

CHAP. III.

THE PRACTICE OF SHOOTING.

2519. *Few will be prepared to contend* that there is not an inherent wish in most manly breasts to excel in the use of fire-arms. Even the name of “being a shot” must have great attractions, if one who has written on the subject is correct, when he seems to imply that London furnishes a number of gentlemen who, in the common acceptance of the term, are “regular sportsmen;” that is, they regularly take out a certificate, regularly purchase a new gun and a brace of pointers, regularly sport a new jacket on the first of September, and as regularly become tired of all before the end of three days. To many others, however, the practice of “shooting game in the field,” in its most extensive acceptance, is exhilarating in the extreme; and to become a good shot the ardent desire of most of them. This is not, however, easy of attainment without inherent properties; and, even then, judicious instructions are necessary to enable the inexperienced to attain it readily: but, ere we proceed to offer any directions how to acquire the art of shooting, we will again glance at the principal instruments used in it, namely, the gun and its loading.

SECT. I. *Examination, Trial, and Methods of Loading a Gun.*

2520. *There are few implements* but require trial previous to our making use of them. If, however, there be one to which this caution applies more than another, it is the fowling-piece or gun: nor is it hardly less necessary that we should be as well acquainted with the proper methods of charging it. When we call to mind the numbers of melancholy accidents which almost every year occur from the bursting of faulty fowling-pieces, it behoves every one, however zealous he may be in his love of shooting, that, in justice to his own personal safety, he should be at least equally careful to avoid the perils that attend the use of an unsound gun. If this caution were necessary formerly, it is doubly so now, when the market is inundated with fowling-pieces, cheap in price, handsome in appearance, but, like the Jew's razors, “only made to sell and not to shave.” We have already offered some matter on this subject, to which we would refer (see p. 734.). It is however so important, that we cannot forbear introducing the following from the *Oakleigh Shooting Code*, a work in which there is much flash, but some pith, of which the following is an example, and applicable to our present purpose: — “It is not altogether true that the best guns are made by the most celebrated makers; but the reason why a gun made by one of these makers is to be preferred by a person not thoroughly conversant with the *arcana* of the trade is, the probable certainty of his obtaining a good one, for a first-rate maker will not hazard his reputation by turning out an indifferent one. The unwillingness, however, to give a first-rater's price, induces the shooter to look out for a second-hand piece; and the eagerness with which second-hand pieces are sought for, has led to a species of deception to entrap the unwary. The following remarks on second-hand fowling-pieces are by a

gunmaker: — ‘Eight out of ten of the guns sold as second-hand are new guns, made up purposely to suit the public taste or predilection for second-hand guns by a good maker. And really one might suppose that none but mere novices could be imposed on by them, for they generally bear the names of makers, many of whom were dead before the invention of the copper cap; such as Henry Nock, H. W. Mortimer, Fenton, Hewson, &c. &c. But all these are warranted genuine.’ (P. 50.) Does not this put some of our readers in mind of the queenly remark to a deputation of wiseacres, — “Ye men of Coventry, good Lord, what fools ye be!”

SUBJECT. 1. *Examination and Trial of a Gun.*

2521. *A thorough inspection and full trial of a gun* should always be made before it is purchased; and such inspection and trial are more particularly necessary to be insisted on, where either a cheap gun is to be bought, or one to be selected from either second-hand or reputed cheap stores. Having satisfied yourself that it comes readily up to your shoulder place, commence your examination by trying the action of the locks, particularly remarking whether the several parts work smoothly on each other. This done, have the locks or lock removed for internal inspection, when the descriptions already given, and the cautions already laid down, may assist the judgment. Next, let the breeching be taken out; and remember that the screw, both male and female, be examined carefully, that the male ribs and the female indentations fit so closely together as to harbour no wet; but that, when screwed up, they make a solid mass. This is often little attended to; but if the amateur will take out the breeches of some of the cheap guns, he will be convinced, by the ill fitting together of these important parts, how liable such a gun must be to corrode, and eventually to burst. We therefore say, buy no gun that shows any mark of disunion between the breech-screw and the barrel; also look down it against the glare of a large candle, and if any flaw appears, let it be carefully examined with callipers. The breech or breeches being replaced, proceed to an equally close examination of every other part of the barrel. Next examine the stock and its mountings; and being satisfied of their soundness, strength of parts, and general unity of action throughout, the next step is to try the shooting of the gun yourself. Gun-makers will *themselves* try a gun before you, and many of them will do it fairly; but others have various modes of giving unfair advantage to the gun, and taking them also themselves. In the range, for instance, we have shown that there are methods of slightly balling the shot, so as to make them exhibit a most tempting garnish. If you are on the premises of the gunmaker, unless he can show a space of fifty yards in length, how can you form an opinion of what may be the killing extent of the range of this, or indeed of any gun you may try there? and even if you are satisfied the piece will carry its shot so far with a fair elevation only, do not fail to mark the depth of indentation they make on the wall or target. Without this proof of the strength of the delivery of its charge, the shot may ball among the feathers of your game when you come to use it, but not enter the vitals or break a wing. As to a trial of the elevation of the gun, firing at a target certainly gives it; yet, as Colonel Hawker justly observes, for certainty in this respect there is nothing like firing at an object in smooth water. For instance, set a good sized trimmer afloat, and blaze away at that, having some observant person with you to mark the effects of the shot. Snow on the ground affords a good indication of the range and garnish of a gun, as well as of its elevation, if you accurately measure the distance.

2522. *An iron target*, however, forms a sufficiently efficient mode of trying both the range, garnish, and force of the shot. Chalk it well over, and renew the chalking after each firing (*fig. 391*). It would be well, also, to have a large linen sheet, or otherwise several large sheets of white paper pasted together, and placed under the target to catch the shot, whose figure, by being more or less indented, would show the greater or less force with which they were propelled against the iron. The surface of the paper laid down must, however, be large, or the rebound of the shot would carry them beyond its limits. Let the trials also be varied by using different proportions of powder and shot, not only as regards their own relative proportion towards each other, but likewise as they relate to the gun. Let daily trials also be made under every variety of circumstance; as the methods of loading the



IRON TARGET.

gun, of holding it, its state as being clean or foul, the state of the weather likewise, whether it be dry or moist, windy or calm.

2523. *Milled board*, or very strong brown paper, either of them will make an excellent target, when an iron one is not to be procured. Each sheet should be hung by tenter-hooks against a wall; or, in preference, to a square of boarding raised on a pole. The dimensions of the square (or it may be a circle if the trier pleases) will rest with the sportsman; we should recommend one about a foot and a half, marked off in squares, and the same crosswise if a circle be employed. The paper when it is used should also, like a draft board, be *squared* around by chalked lines, drawn an inch and a half or two inches apart. At proper distances on the outer circumferences of the target or wall to be shot against, let tenter-hooks be placed to secure the brown paper. Measure off the ground to certain distances, commencing at fifteen yards, and increase each trial by five until it arrives to fifty yards, with as many more as the trier pleases. As soon as a shot has been made, note the range, the charge used, the number of shot which have entered each *square*, and the depth to which they have penetrated. Chalk over each indentation, and repeat the experiment at another distance, greater or less, according to the intent of the trial, as whether meant to detect garnish, range, or force. Or otherwise alter the charge only, and renew the shot at the same distance, when the best proportions of powder and shot are the objects principally sought for.

2524. *The squares of the target*, or circles within the circle, if a round one be preferred, should exhibit marked superficies, somewhat in unison with the usual solid dimensions of the various game. The first square therefore may be two inches, which will take in the snipe, as that of two and a half may be considered appropriate to the dimensions of the quail; of three and a half to the woodcock and young partridges. Older birds would spread their limits to four inches; the grouse to four and a half; and the pheasant, if a hen, to five; and a full grown cock would hardly escape any shot that struck within the limits of the square of five and a half. Of course the tips of the wings of the birds here mentioned might meet a shot which extended beyond the limits appropriated to it. We only give some clue to a knowledge of what may be expected from the garnish of a gun as displayed on the trial. We have not yet observed that when much accuracy is required in the trials, particularly if made by an unsteady hand, "a rest" will be a great assistance in gaining a just indication of the shooting of the piece. It is not unlikely that *some* may call this wire drawing; we are however certain they will not belong to the body of reflecting or experienced sportsmen; they will know better how to appreciate rule, method, and illustration.

SUBJECT. 2. *Loading the Gun.*

2525. *Much of the success in shooting depends on the method of loading the gun*; so much, indeed, that we have heard it asserted some will charge an indifferent piece so as to make it carry its charge in every respect better than another intrinsically much its superior; and this entirely because it was loaded with more judgment. To proceed, however, with our subject: in the first place be mindful to comply with the olden but prudent practice of squibbing off your gun, be it percussion or flint; for, by so doing, you not only warm and dry the barrel should it have absorbed any moisture from the air, but likewise the squibbing, by slightly coating its inner surface, enables it more certainly to retain the first charge firmly in its situation; which, were the barrel highly polished within, might, without this precaution, become loosened, and thus entail disappointment, if not worse consequences, at the first shot. Having drawn up the cock, and removed the broken cap, or wiped the edge of the flint if that is used, both to remove foulness and to observe that it is not broken, hold the gun upright, and in that position pour in the powder, striking the butt slightly against the ground, to carry down such grains of powder as may have lodged against the sides of the barrel, and also to settle the mass. Next pass the powder wad down until it reaches the powder, on which press it lightly only. This done pour down the shot also, and give a shake or two to settle them evenly in their bed; place over them a wadding of sufficient substance and elasticity to maintain the shot in their situation, to which end give a moderate pressure to the wad, but avoid ramming it hard; the first charge may, however, receive more pressure to secure the shot than the subsequent loadings. (See the subject of *Wadding*, p. 772.) We are at this moment supposing ourselves giving directions for charging a percussion-gun. It may not be amiss, therefore, when the powder is wadded, to observe whether it makes its way into the nipple by the pressure of the confined air, made in passing down the wad. It does not, however, always follow, that if the powder is not seen in the pivot, that it will not explode; it is nevertheless more satisfactory to see it there, and when we have not seen it in our own gun, we have given the breech (holding the pivot downwards) a slight tap or two to introduce it further up the touch-hole. This non-appearance of the powder at the touch-hole, it may be remarked, is more likely to happen to the perforated or serrated waddings made to let out the confined air than when the wad was introduced entire. The last action in gun loading is that of putting on a fresh cap, and letting the cock down very gently to fasten on the nipple. In charging the flint-gun it is also prudent to squib it first, and then to introduce the powder and shot as already directed; next introduce sufficient priming to ignite the powder in the barrel, but not so much as that the pan cover shall crush it. If a double gun be employed, it will be optional with the sportsman to load both barrels alike, or to give, as many do, a somewhat heavier charge to the second barrel, be it right or left, that the gunner usually fires on the longest shots. If the quantities of powder used are the same for both barrels, the size of the shot may at least with much propriety be somewhat larger for the second barrel. Many sportsmen slightly increase the quantity of shot also for the charge of the

second barrel, which can only be proper when the weight of powder is somewhat increased likewise; and even then its propriety is questionable, so dangerous is it to alter the proportions of powder and shot, which repeated experiments have shown to suit the piece. When a gun has been discharged, it is, we repeat, good practice to load it again immediately, that is, while the barrel is yet warm; otherwise, as soon as moisture, begins to form over its inner surface, it catches some of the finer particles of the powder-charge, and either decomposes them there, or prevents their falling to the bottom; and thus, in either way, the detention lessens the projectile force which is to act on the shot.

SUBJECT. 3. *The proper Proportions of Powder and Shot.*

2526. *The proportions of both powder and shot best suited to any gun are necessary to be known, before we make any practical use of it in the field. It will often require many experimental trials before we can become acquainted with that charge which the piece performs best with; that is, as regards its range, garnish, and freedom from unpleasant recoil. Neither must the trials made be confined to any certain proportion of both powder and shot tried together; but having, as you suppose, by experiment gained the exact quantity of either powder or shot, you should extend your trials to the same charges of powder with a different charge of shot, and so on, vice versâ, until you have obtained that exact quantity of both which is best suited to the gun in question. We need hardly premise that the rapidity of ignition and force of expansion effected by the percussion method, requires that somewhat less powder be used for the detonator than for the flint-gun. What that exact quantity may be, the experimental trials will determine; but it usually ranges at between a fourth and a fifth less for the detonator than for the flint-gun. In the artillery the trials of guns, large and small, are commenced with very moderate charges, particularly of powder, which are gradually increased as long as the range of the shot increases. The range having arrived at its maximum, any additional powder will diminish it, although the recoil will continue to increase with the increase of powder. We have witnessed these trials at Woolwich, and know the facts to be as we have stated them; and we note them as showing the nicety of the tests required, and the fallacy of judging of the range of the shot by the force of the recoil. (See *Recoil*, p. 735.) Colonel Hawker settles all this, however, without troubling us with making experiments, by directing that, "to load a single gun of six, or double gun of seven, eight, or nine pounds' weight, take a steel charger, which holds precisely an ounce and a half of shot; fill it brimfull of powder, from which first prime, and then put the remainder into the barrel: to this add the same measure bumper-full of shot, and then regulate the tops of your flasks and belts accordingly." (P. 119.) It is to be remembered, however, that when directing these proportions, the colonel has in view his favoured variety, the flint-gun; consequently, some abstraction must be made on that account; and the same must be borne in mind when he directs the several proportions by weight also, which are for the guns mentioned, a drachm and a half of powder, *exclusive of the priming*, to an ounce and a half of shot. For a gun of twelve pounds these proportions, he says, should be doubled; for one of eighteen, trebled; and for one of twenty-four, quadrupled. However the hints, that although these proportions of powder are proper, because the larger the barrel the more powder is wasted in going down it, yet in the shot they should be somewhat lessened; and from our experience also we are certain that they should be so. The following proportions appear in a recent publication before us, and as they are very nearly the same as those we have long accustomed ourselves to, we of course advocate their use. These are the sixth part of an ounce of powder for a single percussion-gun, and the seventh for a double; and we are inclined to prefer these to those of the colonel, who however uses more metal, which may account for the increase he advocates. The weight of shot for a single percussion-gun of common substance may be one ounce and three-quarters; one much heavier will bear one ounce and seven-eighths. For a double-gun an ounce and three-eighths may be used for the first or left barrel; but for the second an ounce and five-eighths. Between the quantities of shot for the two barrels it is a common practice, as already observed, with many good sportsmen, to load the second or right hand barrel with shot, one or two sizes larger than those used for the first or left barrel; the second shot being usually a more distant one than the first. Are the shot of the second barrel directed to be less in quantity, under an impression that the remainder would be carried both with increased velocity and force? Such argument is occasionally used, but we are inclined to doubt the justice of the recommendation, or the rationale of its action. It is by no means a bad practice, in trying to gain a knowledge of the proper proportions of powder and shot, both relatively and individually, that the gun shoots best with, to commence by using small charges of both, marking with precision the increasing range of each shot. As soon as the range decreases, consider the former shot as the proper load for the gun with these relative proportions of powder and shot, and carefully mark them down. The trial, however, must not end here; but a new series of experiments must be commenced, in which the relative proportions of powder and shot must be varied; as, for instance, more powder and less shot, still marking down the results with accuracy. Proceed next to augment the weight of shot in proportion to that of the powder, and having satisfied yourself of the beneficial or detractive consequences of*

these latter experiments, so proceed. To mark the increase or decrease of recoil, as far as personal feelings are concerned, is very natural; but unless it be inordinate, it neither adds to, or detracts from, the real force of the shooting of that gun. We are conscious we shall find disbelievers of this doctrine, but when they have made only one-half of the number of the experiments on the subject which we have done, they will be of the same opinion. Consequently, we deny the *dictum*, that the recoil and the range are in the reciprocal ratio of the gun and the shot at all times. Let the tyro be assured that heavy loading will not further his views as connected with the killing of game. If he put into the gun too much shot, the expansive force by which the charge is ejected will be disgregated, and consequently both its range and force will be lessened; if too much powder be used, it may be ejected, or at least disturbed, ere it acts on the mass of shot. How many unburnt grains of powder may be collected from a sheet spread under a heavy charge of shot when exploded. A cautionary remark may be neither irrelevant nor out of place. While loading one barrel by no means put the ramrod down the other as is often done; on the contrary, return it partially into its place, or even hold it under the arm, although unsportsmanlike. When it has been put down the barrel, should only one shot follow, it often happens that by its means the ramrod becomes wedged in, and cannot without injury to either ramrod or barrel be removed. By all means, likewise, after the fired barrel has been re-charged, slightly shake the gun, so as to assure yourself that the shot in the right-hand barrel has not moved; if it rattles or vibrates against the sides, again ram it down. The least shake of the barrel will detect the loosened charge, and thus save much trouble; but when a substantial wadding is introduced, of the full size of the caliber, there is little chance of the shot becoming displaced.

2527. *Mr. Greener's opinions on the proportions of powder and shot to form a proper charge for a gun are as follows:—* As regards the powder, "Suppose you begin with two drachms, and vary the charge one-eighth of a drachm, each shot up to three and a half drachms, or as may be required, according to the length and bore of the gun, and for precision taking three shots with each charge, at a sufficient number of sheets of paper; whichever you find strongest, with the least quantity of powder, that is the best charge, as very likely the two next additions of powder will shoot equally strong, and yet not stronger, because more of it remains unburnt. Therefore, the least quantity that shoots equally strong is the proper charge, which having once ascertained, never change for any person's plan." (P. 181.)

2528. *On the proportions of shot the same gentleman observes,* "All guns, according to their bore and length, will shoot a certain weight, and a certain size of shot best. A great deal of shot in a small bore lies too far up the barrel, and creates an unnecessary friction; and the shot by the compression at the moment of explosion becomes all shapes, a circumstance which materially affects its flight. If of too great a weight, the powder has not power to drive it with that speed and force required to be efficacious, because the weight is too great in proportion. Those who reason from mathematical calculation will object to this doctrine. Say they, the greater the weight the greater the effect. No doubt it is so, if thrown with a proportionate force; but that cannot be obtained with a small gun. We must adapt the weight of projectile force to the power we are in possession of; and from many experiments I am inclined to think, that a fourteen gauge, two feet eight barrel, should never be loaded with above an ounce and a half of shot (No. 6. will suit her best), and the utmost powder she will burn. A fifteen gauge will not require more than one ounce and a quarter; and no doubt No. 7. would be thrown by her quite as strong as No. 6. by the fourteen gauge-gun, and do as much execution at forty yards with less recoil; and setting aside all other reasons, I should, on this account, prefer a fifteen gauge-gun, if both be of a length, finding I can do as much execution at the same distance with one as with the other." (P. 182.) The subject is an important one to the sportsman, and ought not to be lightly passed over; indeed, it is of the utmost importance, as well to the safety as to the success of the sportsman. Under this conviction, and at the risk of being taxed with being too profuse, we have not only somewhat enlarged on it ourselves, but have also stated the opinions of our most accredited writers, that the ingenious reader may choose between them, or adhere to his own, if they have satisfied him. *Experientia docet* (experience teaches) is an old but excellent maxim.

SECT. II. *The Art of Shooting Flying.*

2529. *To arrest the progress of a bird on the wing, or of a beast when running,* cannot but be considered as an act both of enterprise and dexterity. It is not, therefore, to be wondered at, that shooting should be so favourite an amusement, nor that in many hands it proves so difficult of attainment. We know at the present moment several zealous sportsmen, who will walk after grouse from early morn until dewy eve, and consider themselves sufficiently repaid if they have averaged one bird from every four shots; while the partner of such an one, not a whit more eager, seldom misses more than one out of five or six shots, and yet esteems himself an indifferent marksman. To what are we to attribute this vast difference? Has it many causes, or has it one principal cause only? Some

persons of a sanguine temperament unquestionably miss their aim from blending fear with hope to such a degree as to unnerve themselves, and this we believe to be the most common cause of indifferent shooting: they frequently fire too soon, and even without an aim, or they linger in incertitude until the object is out of bounds. We write of taking aim, as though it were actually necessary to success to carry in our eye the line of the gun, from the breech to its muzzle, which must cover the object to be fired at, if the object be at a moderate distance, or must be raised somewhat above it if it be farther off, unless the gun be furnished with the elevated rib. But although this is the only method to insure success, yet there are many of our best shots who appear to become such by intuition; for very early in their shooting career they seem to be sensible to a consensaneous sympathy between the elevation and presentation of the gun directly towards the object to be fired at, without any conscious mensuration. We have heard of a dexterous shot who was so impressed with an opinion, that, in the absence of all cogitation on the matter, what the eye saw the hand would also act in unison with, that he laid a wager he would kill his bird, making his point at it from under his leg as certainly as his antagonist would do it in the usual way; and he did it, not once or twice, but repeatedly. The philosophic sportsman will at once recognise and understand this sympathetic action between the eye or eyes (as many good shots do not close either) and the motions of the hands. In archery practice, how is it that we direct our arrows with such unerring certainty? We do not look along either the bow or the arrow, but at the target; yet both organs, hands and eyes, act in concert, and the prize is gained. Many excellent shots invariably fire at their game with both eyes open. Mr. Baker, a valued friend of ours, and an excellent shot, always uses both eyes; it does not at all matter, in the hands of these made shots, whether one or two be used; it is the bird alone that is looked at, the hand acting in unison, levels and directs the gun. It is the want of coolness that is the cause why so many zealous sportsmen never become good shots; nevertheless, in the face of our cautions against firing too quick, probably it is better to fire too quick than too slow. A quaint writer on this subject says, "the fingers being a day's march behind, is the principal cause of missing;" and we are confident that, to a certain degree, he is right. Remedy this hanging fire by a settled determination to pull the trigger the moment your gun covers the object, particularly if it is going straight away; but should its direction be to the right or left, fire a little a-head. First, however, endeavour to attain the habit of actually and correctly covering the object to be shot at with the muzzle of the gun, and be equally careful, at the same time, that the breech and muzzle are rectilinearly directed. But hark, back! and we will, as some wise-acre has said, "begin from the beginning," and suppose ourselves undertaking to instruct the entire novice, one who has not hitherto ever fired off a gun even. Having well considered the height, length of arm, and inclination of shoulders of the pupil, observe that the initiatory lessons be given with an uncharged gun; but the gun must be equally critical in its perfect adaptation to the personal points of the tyro, that is, that it comes up readily to his shoulder and settle itself, as it were, spontaneously to a correct line of aim (see *Gunstock*, p. 761.), the breech and sight at once presenting a dead level, and covering any small object, as a wafer stuck against a wall. The accuracy of the aim the Mentor will observe, by placing himself advanced a few paces directly before the gun, from which position he will be able, by directing his eye along the line of the barrel, to correct his pupil by requiring him to elevate or depress either the breech or the muzzle as the case may be. This simple *handling* of the gun should be practised for an hour or more at a



time for several days, occasionally raising or depressing the object of aim: indeed, with a little mechanical tact, the object of sight, be it round or otherwise, may be made movable, so as to advance, retire, or proceed, to the right or left, &c. It is of consequence that it be impressed on the recollection of the learner, that he hold his gun firmly to his shoulder (see *fig.* 392.), and place his left hand close, or nearly close, to the trigger-guard. Having safety in view, this certainly is the best method, as many barrels of guns so held have burst without shattering the hand. Some sportsmen, however, satisfied of the perfect safety of their piece, advance the hand a few inches forward, and without doubt it has the effect of preventing the gun from becoming point-heavy, which is at all times most unpleasant; and at the end of a long day is, without doubt, the cause of many a misshot. The Mentor, indeed, would do well not even to allow the initiatory lessons to be made with a piece whose ends are not proportionate in weight, that the habit we caution against may not take root: if, however, it should unfortunately happen, that a gun of this description has been already purchased, let the stock be charged with a portion of lead run into a cavity directly behind the heel-plate, as further noticed at p. 762. A gun being breech heavy is not very common, and is an evil, when it does occur, that is of less importance.

2530. *To enter the pupil to the shooting of living objects* is the next lesson, and we would commence by remarking, that we are by no means enamoured of the usual plan recommended of firing at swallows and martins. Their flight represents very indifferently the flight of game of any kind, independently of its unnecessary warfare on a most interesting and innocent race. A better practice is to entrap sparrows in numbers by means of traps or by what is known as bat fowling. Sparrows thus taken, and having their flight somewhat obstructed, as well as their figure enlarged, the first by shortening their wings, and the second by a piece of white paper around the neck, make excellent marks. In this state, being liberated one by one from a box on the ground, at fifteen or twenty yards' distance, a ready aim may be taken at each, and will offer a very good initiatory practice, which method of entering a pupil may be, and will be, laughed at by many; but we have known so many instances where an early tremor has delayed improvement in some, and marred it altogether in others, that we recommend it confidently, as it does much towards divesting the pupil of that trepidation which the rush of a covey of partridges occasions, should he be entered first to them. By this mistake of not being subjected to an initiatory process, such as that we propose, some have never been able to see a covey rise without a painful agitation. We would also strongly advise the young shooter to commence his practice with both eyes open, as by far the best method. Colonel Hawker says, "If the young shooter begins to shoot with both eyes open, he will save himself the trouble of learning to shoot so afterwards. An aim thus from the right shoulder comes to the same point as one taken with the left eye shut, and it is the most ready method of shooting quick." (P. 139. 8th edit.) On the expression, "shooting quick," we would ourselves observe, that we here enter a caution against any misapprehension of the term. With us it would imply promptness, but we would by no means wish to make any pupil of our own a *snap shot*: such are not pleasant company shooters, and they usually mangle their game terribly; but we again repeat, real *dead slow* shooting we would eschew. We would also strongly recommend the young sportsman, that while he is not careless of success, but, on the contrary, endeavours to secure it, he be not over anxious for it, nor dispirited in case he should succeed indifferently only on his outset. We know of nothing so likely to beget disappointment as despairing to succeed; on the contrary, he may rest assured, that with only common attention and continued practice under good tuition, in company with steady and good sportsmen, he will himself become their equal: what the head determines the hands will generally perform; fire moderately quick, but nevertheless not in a hurry. *Festina lente* should be engraved on the breech of the gun of every beginner, as quickness without impetuosity is exactly what is wanting to make an excellent shot.

2531. *Trepidation and indecision*, we repeat, are great drawbacks on attaining the art of shooting flying. We conceive that this assertion will be readily understood and assented to, when the different attitudes of the gunners seen in our next figure, p. 784, are studied. Look at him, who, in spite of our instruction, is seen stooping, and creeping with his shoulders thrown forwards, and his heart, in all probability, fluttering at the very sight of his dog which he hopes may be pointing his game. Look also at the deportment of his accompanying friend, who is seen advancing upright and steady, although evidently delayed by the perturbation of our pupil, to whom we would thus address ourselves:—Compose yourself, good pupil; be a man, and advance erect, under the assurance that when you do rise you must somewhat discompose your whole frame; and that, in altering your position, you will lose some seconds in gaining a new one; neither is a rising attitude favourable to a quick and correct elevation of your gun. Of this we are so assured, that we are prepared to bet against your success, and are equally ready to back that of your companion. Bravo! you have taken our advice, and are actually upright; and, what is confirmatory of the justness of our remarks, your dogs remain steady, and the birds close; step out therefore firmly, but leisurely, that, on the instant the birds do rise, you, being already prepared with your gun a little pointed forwards, advance your left leg straight, and direct your right foot slightly outwards to strengthen your position, without any hurtful constraint on your person, but, on the contrary, making it at once strong yet flexible. A firm placing of the lower limbs, it is self-evident, is very important in shooting; for it greatly assists the arms in readily and gracefully elevating and presenting the gun. We hardly need to tell the most youthful gunner that his piece is to be usually carried barrel upwards, and sloped over the left arm, the lock being clasped by the hand of that side, the fingers embracing the cock, which allows the arm, although supporting the gun, yet to do it with ease, and to be ready by a cross motion to place it within the grasp of the hand previous to the meditated elevation. We have observed some practised sportsmen at this period of shifting the gun to turn the barrel down, not on the right but on the left arm, the flat part of the stock opposed to the lock being clasped with the left hand, the thumb resting as a guard on the trigger, while the fingers pass around the upper portion of the stock turned down. In the other method it is evident that the weight of the piece bears chiefly

upon the cock, and it is equally so that, by this mode of carrying the gun, not only is the cock less liable to suffer from accident, but that the removal of the gun into the right hand is more quickly effected, the left taking its place when wanted for shooting action. We may also remark, that the young gunner is apt, after an hour or two has been spent in walking, to become fatigued, when the carriage of the gun, as we have recommended, is felt somewhat fatiguing. At such times it is apt to be carried either on the shoulder, or is seen swinging on the fingers. Should this slovenly method be adopted, it must not be wondered at if the dogs become slack in their hunting by taking the tone from their master; and it is ten to one, that although some of the fairest shots of the day may present themselves, yet, for want of being ready, the opportunity of taking them is lost, the shooter is chagrined, the dog even loses his mettle, and the sport is at an end. The author of the clever work entitled *Kunopædia*, finishes his initiatory lesson on this subject by desiring the pupil to "carry the gun with the cock inwards and down, and the side of the stock imbedded against the inside of your left arm, taking an easy position, considerably below the chest." Now, sir, look at the important difference in the elevation of the barrel: even carelessness can hardly bring it into a direction in which the discharge from it would not be made at an angle of twenty or thirty degrees above an horizontal line; much above every possible risk to the nearest ranging companion. Under the contingency of a fall, the difference is still greater: in the former position, from a trip of the foot, the arm being instinctively thrown forward, down goes the muzzle of your gun sideways, and off may go the contents, raking the whole line to the left: but if carried in the other way, and clasped by the left hand as directed, then, under the same falling projection of arm, the discharge would be at a considerable height in the air, with the additional security of a direction backwards." (P. 180.)

2532. *Advancing to fire.* We will now look to the sportsman on the right, where the shooter exhibits himself and the art to advantage, by moving firmly but cautiously towards his dog, now making a dead point, and being admirably backed by his fellow dog. We suppose the right hand of the gunner grasping the stock (*fig. 393.*), with the fore-finger alongside of the trigger, but which is nevertheless guarded from any accidental effort by the thumb, which secures the half cock. These cautions are very necessary; and what evils might not result were the approach made without them, when the entangling of an unseen briar might catch the advancing foot, and the stumble occasion the firing of the gun, which might wound the dog, and certainly utterly disperse the game. If, on the contrary, he advance in the true attitude of an experienced and practised shot, with his



ADVANCING TO FIRE.

eye fixed on the supposed situation of the birds, it is directed by Mr. Dobson that he make preparation for the expected shot, by throwing the butt of his gun from him to an easy extent of both arms; but loosening a little the grasp of the left hand, turn the cock downwards, and let the barrel come down more in slope over the left shoulder. It is during this combined action of throwing the butt from him, and turning the cock downwards, that the act of cocking will most readily be performed, the cock to continue secured by the thumb over it, and quitted only as he proceeds to the next motion. "In the act of cocking let your fore-finger quit the front of the trigger, and, extending itself sloping forward through the guard, only feel the side of it with gentle pressure. Your body, by this action of throwing out the butt, combined with the step-out of the left leg in taking form, will be brought with its weight principally upon that limb; a position assumed, as more immediately called for, when the flight is nearly in a line from you or to the left, which will comprise four out of five of all your shots." (*Kunopædia*, p. 185.) Present! "Let the barrel, as at this moment, inclined over the left shoulder, be swept in a circle forwards with a smart motion, the fore-finger of the right hand (sloping, as we have before placed it, through the guard, and clear of the front of the trigger), being as it were the centre of motion upon which the gun turns during the sweep; by which action the butt should be raised nearly to its full height, and then bring it back, with somewhat of a thump, into its place within the shoulder; whilst, at the same time, an increasing grasp with the left hand, which till now has kept its hold rather loosely, combines with that of the right hand upon the gripe of the stock to keep it firmly there. The direction of the barrel to the mark, or what I would call the *line of level*, to be taken, in the first instance, a little below that which, as already drawn by your eye to the object, I would distinguish by the *line of sight*.

Again let me remind you, that the latter be firm and irremovable; to which a precise adjustment of the line of level must finally be made, by an easy flexure of the upper part of the body altogether, but without any loosening or twist of the butt from its firm hold within the shoulder: and on the instant that you get these two lines in contact, or, in other words, at the moment that you bring the muzzle of your gun, from its first level a little below, to bear direct upon the object." (*Kunopædia*, p. 187.)

2533. *The handling and direction of the gun*, however, must of necessity vary with the nature of the game to be fired at. Colonel Hawker directs the beginner in the movements of his gun as follows:—"Before an object *crossing*—full high for a bird *rising* up, or flying away *very low*, and between the ears of hares and rabbits running *straight away*; all this, of course, in proportion to the distance: and if we consider the velocity with which a bird flies, we shall rarely err by firing at the crossing bird, when at forty yards, at least five or six inches before it. (As the barrels of double guns usually shoot a little inwards at long distances, there is so far a preference in favour of the right barrel for an object crossing to the left, and *vice versâ*, that if we were beating along the side of a hedge, it would be best to keep the barrel next to it in a state of preparation). Till the pupil is *au fait* in all this he will find great assistance from the sight, which he should have precisely on the intended point when he fires; he will thus, by degrees, attain the art of killing his game in good style, which is to fix his eyes on the object, and fire the moment he has brought up the gun. He may then, ultimately, acquire the knack of killing snap shots, and bring down a November bird the moment he tops the stubble, or a rabbit popping in a furze-brake, with more certainty than he was once used to shoot a young grouse in August, or a partridge in September." (P.134.) We read in a work of less repute, that in taking aim, "the point of the gun or sight, in a right line from the mark upon the breech, should be levelled point-blank with the object; and then the finger must instantaneously pull the trigger, as on this quickness of the hand the whole art of shooting depends." It is not to pick out defects in the writings of others that we notice any such misdirections as these, but merely to warn the tyro against following the matter, often collected to make up a book by persons who, though not being practically acquainted with the subject they write on, yet by dogmatic assertions and mystifications contrive to command attention and belief from the inexperienced. The following directions by the *Suffolk Sportsman*, from the pen of the learned and reverend B. Symonds, are not of this class; and although they had not before met our eye, we cannot refrain from strengthening our instructions by what we consider a backer to them:—"When a bird gets up he is certain he cannot kill it (we must premise that his gun is uncharged), therefore he can wait to any length, until he gets it at the end of his gun. He must never draw unless positive of seeing the bird in that very point of situation. Let it go: every fresh spring of a bird will make him more composed; and as the tremor wears off, he will grow more uniform in his manner of getting to it, till at last he will cover it almost to a certainty, or very near the same distance. Let him accustom himself not to take his gun from his arm till the bird is on wing, and never to vary his eye from the very one he first fixed upon. Three words should mentally be used, with a pause between, before he puts his piece to shoulder: this will keep him, as it were, in awe of himself; and as there is no charm in any particular combination of letters at this time, hold! halt! now! may serve as well as any. A day thus spent, he may put some powder into the pan, and flash away in that manner; the next, pursuing the former directions till he can stare with steadfastness, and pull without a wink. The day following load with powder only; and to continue this lesson two or three days, more or less, till he is calm as if the leather was yet in the chaps. Now the grand and last trial—complete loading. If he feels any flutter or anxiety on his advance to the point, let him draw his shot at once; nay, powder also, before he goes up to his dog; and repeat this, *toties quoties*, till he has whipped himself into good temper, and disappointed himself into the accomplishment of his wishes. In cross-shooting, if a bird goes to the left, step forward with the right foot; and the contrary if to the right hand. This removes at once the complaint often made, of not killing so well one way as the other. Shoot at the head in every direction, if possible; and I cannot see any necessity for greater allowance. In elevation, let the front of the guard be a stop for the gripe of the left hand; in which situation, if the barrel should burst, it will not be so liable to be injured; and the thumb being erect, an avenue is artificially made by means of its corresponding with the cock-nail, that gives great direction to the eye. I hope all this appears rational and convincing." (P. 148—151.)

2534. *The connection between the eye and the hand* should be consentaneous, but not arbitrary, further than that the hand should obey the eye, rather than the eye should be subservient to the hand. As soon as the eyes bear on the object to be fired at, provided the muzzle of the gun does the same, fire; for protracted looking weakens the sight, and also increases the distance of the object shot at. It is this protracted looking until a sufficient distance has been passed over, that occasions so much difficulty in killing a bird that rises as it were under the feet, and continues its flight horizontally. Such a shot is

often missed, for a long aim fatigues the eye, and unsteadies the hand. "The young shooter," Mr. Daniel observes, "should make himself perfectly acquainted with distance; with that knowledge in open shooting, he will never put the gun to his shoulder until the bird has flown a proper length, and then fire the instant the sight of it is caught. To kill birds flying cross either to the right or left, allowance must be made by the shooter both for the distance he is from them, the strength of the birds, and also the velocity of their motion; for it must be taken into account that the flight of a partridge in November will be greatly accelerated to what it was two months before. Practice alone can teach these *minutiae*, which, if fixed at any given space, or attempted to be uniformly regulated upon paper, might lead the marksman erroneously in the field. It may however be mentioned, that in a cross shot to the right the difficulty is very much increased if the right leg is first when the bird rises; the gun cannot then be brought but a very trifle beyond a straight line to the right, and frequently gentlemen stand with their feet thirty inches apart when in the act of firing, a position that effectually prevents their bringing their gun to bear upon a crossing object. When dogs point, or when game has been marked and expected to spring, the walk should be with short and easy steps; the body can then be easily turned upon the legs, as if on a pivot, and the range of the bird commanded, even if it should fly quite round the sportsman. The science of aiming accurately, however, will be of little service, except the gun is held steady from all starting or flinching in the action of firing; it is to small purpose to traverse the gun with the celerity of a bird flying rapidly in a transverse direction, if the person suspends that motion when he touches the trigger to pull it. In this interlapse between the beginning of the pull and the appulse of the shot to five and thirty or forty yards' distance (be the pull and stroke of the cock as short, and the fire as quick as possible), any bird of game will, in a serene day, gain progressively in its flight above two yards, and with a rough wind considerably more. Quickness of sight and steady aiming will never constitute a marksman, unless the motion of the gun corresponds with them, and receives no check whilst in the act of drawing the trigger." (*Rural Sports*, vol. iii. p. 488.)

2535. *What should be considered as the average distance of a fair shot?* is a question often asked, and not infrequently very unsatisfactorily answered; indeed, it might be said it cannot be arbitrarily laid down so as to satisfy every one who either acts on, or forms an opinion on the subject. We are however told, that as far as a general average can be stated, a bird should never escape from the shot of a gun held straight at forty yards. That being considered by many as the fair range of a point-blank *certain* shot is admissible, but it must be allowed that there are three chances to one that, under the same circumstances, a bird will not escape at forty-five or even fifty yards. It is also consolatory to the sensitive shooter to reflect, that the irregularity of the spread of a charge of shot, however well directed, has permitted many a bird to escape at even less than forty yards, and will do so again.

2536. *Shooting in company* should be methodically conducted, to avoid any unpleasant collision or misunderstanding. All birds that cross should be considered as belonging to the gunner to whose side their heads are pointed, unless a previous understanding is agreed on, that either party may take an after shot at a tailing bird. All single birds that rise and go away fair for either party, it may be well to have it previously understood that such should be taken alternately by each shooter.

2537. *Precautionary remarks* of so much importance are directed to individual sportsmen by Mr. Daniel, that we cannot in justice to our subject omit them; and although it may be said that they were intended for the flint-gun, yet it will be found that they apply with equal force to either; and they being so calculated to excite precaution in a sport but too carelessly pursued frequently, we cannot do a better service to the youthful shot than to introduce them:—"Always hold the gun with the left hand close to the guard (and not forward upon the barrel to strongly grasp it near the entrance of the ramrod, notwithstanding it has been so strenuously recommended); all the requisite steadiness in taking aim, and even of motion, in traversing the flight of a bird, can be obtained by thus holding the heaviest pieces; and in case of a barrel's bursting, the certainty of having a hand or arm shattered by grasping the barrel is reduced to a certainty of escaping some of the effects of such an accident by placing the hand close to the guard beneath it. With double guns a danger arises from the shooter who fires but one barrel, and kills his bird, forgetting to uncock the other previous to his reloading that which has been discharged: to obviate this, let him invariably uncock the second barrel before he sets the butt of the gun upon the ground. A sense of self-preservation will soon render this habitual, and a man who is so absent or so eager as to disregard this practice, had better confine himself to the carrying a cane instead of a gun." After discharging one barrel, it is common with some to pass the ramrod down the charged barrel to refix the shot and the wad, which from the recoil are apt to become loose; and when that is the case, it is not only needful to prevent the shot from falling out, but is an act of safety, lest there should be a space between the shot and wadding, which would endanger the barrel. It likewise prevents mistakes in loading; and no objection can be made to it but one, and that is a very important one; we allude to the

accidental fall of a shot into the loaded barrel whilst pouring the charge into the fired one, which may occasion much trouble, and serious injury to the barrel or to the ramrod, by attempts to forcibly withdraw it. In such a case keep the ramrod close down, next turn the muzzle into the hand, still keeping the ramrod home upon the charge; when the stray shot will roll out, or be easily extricated. When uncocking a gun, never remove the thumb from the cock until having let it pass down beyond the half bent, and gently raising it again, the sound of the sear is heard catching the tumbler. Carrying the gun in a safe position, and well securing the lock, are the first instructions a Mentor should give, and a young sportsman should learn, and never cease to act up to. The result of neglecting other observances is generally no more than missing the object; but carelessness in the handling or position of the gun are too frequently attended with the most melancholy catastrophes. However probabilities may be calculated on, a proper attention to the muzzle prevents the possibility of mischief from one source, an instance of which is as follows:—When a keeper of the Earl of Chesterfield's was preparing for the field in January 1789, and stooping to buckle on his spur as he sat with his gun resting on his knee, and the muzzle close to his cheek, it seemed *improbable* that a part of the lock should break at that particular point of time; but his instantaneous death was the terrible effect of his not having guarded against what was *possible*. The muzzle of the gun pointing obliquely upwards between the left elbow and left cheek, if the piece fires ever so often by accident, can never do harm; and from this position it may be presented with more ease, expedition, and correctness, than from any other. Beware of the muzzle of the gun being kept hanging downwards; when so carried, the shot is apt to force its way from the powder, especially in clean barrels: if it happens that a space of sixteen or eighteen inches is thus obtained, and the gun fired with its point at all inclined downwards, it is ten to one but the barrel bursts. There are other perilous consequences besides the disruption of the barrel; for men, horses, and dogs, are in perpetual danger of being shot, when a gun is carried in the before-mentioned pendent manner. In shooting with a stranger, who perhaps keeps his gun cocked, and the muzzle usually pointed to the left, plead for the right hand station, and urge that you cannot hit a bird flying to the left; with a gamekeeper, take the right hand without ceremony. In getting over a fence, endeavour to go last, notwithstanding the usual assurance of 'My dear sir, I am always remarkably careful:' and if a person beats bushes with a cocked gun, get out of his company as a shooter with all possible expedition. Recollect, both in the house and in the field, always to consider a gun as loaded, and never suffer it to be pointed for a moment towards any human being." (*Daniel's Rural Sports*, vol. iii. p. 489—493.)

SECT. III. *The Spaniel Group of Caninae.*

2538. *The systematic history* of this important and extensive family is fully entered into in our *Natural History of the Dog*, p. 386. to which we would refer the reader for any matter of importance required to carry out the canine connections, either derivative or supplementary, of these or other sporting varieties of this valuable animal. The spaniel group includes the setter, the common spaniel, the Newfoundland dog, and the retriever; the whole of which, there is much reason to believe, are derived from the eastern hunting dogs of scent, as the coursing dog was also the produce of such as hunted more by sight than scent. Without any proof that Spain, in particular, originated this dog, either as he is known to us, or in the varieties we have named, we are at least certain that all the individuals specified in our section were originally included under the term *spaniel*, and were of eastern origin. In Ireland the setter was long called the English spaniel, having been originally borrowed from us; and with many is to this day so called. The integrity of the eastern spaniel appears, however, to have been early broken in upon by artificial mixtures and crossings, to establish the distinct varieties we are about to treat on; but, nominally, the term spaniel for a very long period included almost all the rough-coated dogs. The setter particularly was known by the term spaniel; thus Gay has the "*creeping spaniel*," which denotes his attitude in advancing, as Thomson's flowing measures depict:—

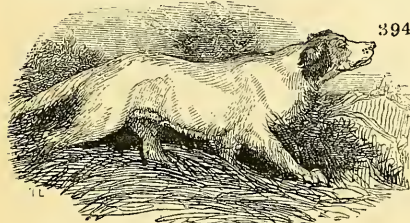
"How, in his mid career, the spaniel struck," &c.

The MS. of Twici, also, has the spaniel for hys craft; which is for the perdrich and quail, and when taught to crouch is very serviceable to the fowlers, who take those birds with nets. We may reasonably suppose that, notwithstanding these quotations, the index or point made by the setter was at least not perfect until he had been duly tutored by education. We may assume, therefore, that the spaniel group was first cultivated in the eastern countries, where civilisation among its inhabitants and a genial climate would tend to the improvement of its native animals. And as we have innumerable proofs of the attachment of these people to the sports of the field, we may conclude that their dogs were judiciously selected from those which showed the greatest propensity to hunt, and presented such form of body, and such qualities, as would insure their success in their hunt.

ings. It has been with much probability supposed, that the first use the inhabitants of every country would make of the subjugated dog, would be to guard their cattle from the incursions of wild beasts and the maraudings of human robbers; and the second, to select those which evinced aptitude at securing animals for the support of their masters. Under this view, it follows that such only would be selected for these purposes as showed strength of body with sagacity and determination as mental characteristics. This eventually led to a triple division of cultivated dogs of the eastern countries into *sagaces*, *pugnaces*, and *celeres*. (See *Coursing*, p. 555.)

SUBJECT. 1. *The Setter.*

2539. *The setter* (*Canis Index* Linn., fig. 394.) we consider to be much in advance of the pointer, in respect of the date of our acquaintance with him. Robert Dudley, Duke of



THE SETTER.

Northumberland, as early as 1555 is said to have trained a setter to the net; and other authorities of antecedent dates notice the sitter or setter as a dog used for sporting purposes; for it was not to be concluded that this application of him by Dudley was his first advent, although he might not until then have been employed as *sitting* or *crouching* to the game he found. The junior sportsman who may honour these pages by a perusal, to perfectly comprehend the intention of the writer, should keep in mind that the setter and spaniel may be considered as direct identities in the beginning; and that they still remain closely allied to each other in every respect except in size. It is to the instinctive disposition in all the spaniel tribe to wind the scent of game, and then to pursue it with ardour, that makes it so much more difficult to steady a setter than a pointer; the latter having, without doubt, been generated by a sexual intercourse between the two ancient canine races, *sagaces* and *pugnaces*; whereas we may, with equal justice, derive the setter from a commixture between the *sagaces* and *celeres*; or, for a more satisfactory account of the three important canine races known as the *sagacious*, *pugnacious*, and *swift-footed* dogs of the ancients, see our *Coursing* department, p. 555. The spaniel group numbers within its limits more symmetry of form, and beauty of clothing, than the varieties of any other canine group. The setter indeed, on which we now treat, both in size and strength has no rival, if we except the Alpine spaniel and the Newfoundland dog, whose majestic form and admirable qualities, were other proofs wanting, would convince us that they also are scions from the same root. Indeed, as we believe, both can, by the aid of early records, be traced to the same stock, the Newfoundland dog having been originally taken to Newfoundland by the early discoverers of the American continent and eastern traffickers. We were not always of this opinion; on the contrary, in the early editions of our *Canine Pathology* we have stated our doubts of the immediate connection of this dog with the spaniel, but which we are now satisfied, by the aids of more extended research, is established. The Newfoundland dog has acute scenting powers; he is naturally extremely fond of hunting, has great tact in the pursuit of any game; and may, in comparison with what might be expected from his connection with his restless type the spaniel, be taught to *stand* to game, and even to *back* other dogs — such are his tractable and teachable qualities.

2540. *The principal varieties of the setter are the English and the Irish.* The English setter in size does not differ from the pointer, but is more loosely made, so as to admit of more rapidity of motion with less diminution of the continuance of that motion. Indeed, it in some respects represents the race-horse among dogs; for he is not only fleet, but very enduring also, and is equalled by few hunting dogs in sagacity, and excelled by none in docility and personal attachment. The temper of the setter has all the spaniel character of humility and fear of offending, and it is but seldom that one either perverse or of a savage nature is met with; on the contrary, they almost all return encouraging notice with marked gratitude. As we are well known to be most zealous in the cause of the canine race, as being equally useful, interesting, and amiable, we shall stand excused for offering the following portraiture of the character of one of this race from so respectable a source as the *History of British Quadrupeds*, by Thomas Bell, F.R.S., F.L.S., where we find the learned professor thus discoursing on a setter: — “By far the most interesting, and, if I may so employ the term, amiable animal I have ever known, was a bitch of this kind, formerly belonging to my father, which he had from a puppy, and which, although never regularly broke, was the best dog in the field he ever possessed. The very expression of poor Juno's countenance was full of sensibility and affection. She appeared to be always on the watch to evince her love and gratitude to those who were kind to her; and the instinct of attachment was in her so powerful, that it showed itself in her conduct to other animals as well as to her human friends. A kitten which had been lately taken from its mother was sent to us, and on Juno's

approach showed the usual horror of the cat towards dogs. But Juno seemed determined to conquer the antipathy; and by the most winning and persevering kindness and forbearance — advancing or receding as she found the waywardness of her new friend's temper required — she completely attached the kitten to her; and as she had lately lost her puppies, and still had some milk left, I have often seen them lying together before the fire, the kitten sucking her kind foster-mother, who was licking and caressing her as her offspring. She would also play with great gentleness with some rabbits of mine, and would entice them to familiarity by the kindness of her manner; and so fond was she of caressing the young of her own species, that when a spaniel bitch of my father's had puppies, of which all excepting one were destroyed, Juno would take every opportunity to steal the remaining one from its mother's nest, and carry it to her own, where she would lick and fondle it with the greatest tenderness. Poor Bussy, the mother, also a good-tempered creature, as soon as she had discovered the theft, hastened, of course, to bring back her little one, which was again to be stolen the first favourable opportunity; until at length the two bitches killed the poor puppy between them, as they were endeavouring each to pull it from the other; and all this with the most perfect mutual good understanding. Juno lived to a good old age, an unspoiled pet, after her master had shot to her fourteen seasons." (P. 220.)

2541. *Two varieties of the setter have been noted, the English and the Irish setter.* Of the origin of the setting spaniel generally we have already stated our opinion; it remains therefore to notice these principal divisions as agents in the field. The *English setter* in size equals the usual run of pointers; in colour he may be met with of almost every tint and marking common to hounds and spaniels; and as far as our own experience extends, the colour of this dog has little to do with his qualities, although fashion in this particular often influences the market price among the sellers and purchasers. One variety we will hint at, of a liver colour, which we thought superior to most others of that time, *i.e.* twenty years ago. The preponderance of the liver hue in this dog was often considerable, but we saw but few entirely covered with it.

2542. *The Irish setter is a large red dog,* of very commanding mien, great powers, and excellent sporting qualities. When we were quartered in Ireland during the Rebellion, we had numerous opportunities of seeing this dog, both in the field and in the kennel; and when well tutored, and kept up to the mark, by strictness divested of severity in point of corporal punishment, he was equally vigilant and steady, either at the point or crouch. Some we saw had rather a lurching propensity of creeping close to the ground, which, if not noticed and reprehended by the owner, ended in a violent spring into what was intended to be the middle of the *pack* or the *covey*, as the case might be, and which, as we learned, was not an infrequent occurrence. We should however remark, that on inquiry it commonly turned out that these semi-poaching dogs belonged to entire pot-hunters, a class not less common there than here. It is truth only that dictates this as due to our readers, to note all we have seen, and all we have learned; but it is equally due to the Irish sportsmen generally to state, that, as far as our own experience went, the real gentlemen-sportsmen are equally enthusiastic in their field sportings, and equally fair in their methods of pursuing them as ourselves. The qualities of the setter generally are very favourable to his character; he however, in most cases, requires more breaking than the pointer; and it too frequently happens that his enthusiasm leads him to forget the instructions he has received, and a small sample of re-breaking is often required before the shooting practices of each season commence. This, however, is principally seen in young setters, and such as are closely kennelled at all times when not on duty: such will become too energetic, when let out to business, to mind that business; but must, like the school-boy who takes his book into the field or garden to impress hard words on his memory, play with both book and memory; and so the wanton setter, thus confined, seeks a game with the birds, and prefers a chevy after them to crouching in inactivity behind them. The *Suffolk Sportsman* observes, "There are now various kinds *called* setters, from their being appropriated to that service, such as, between the English spaniel and the fox-hound, ditto and pointer, and the pure pointer simply by himself. Whim gave rise to the first cross very probably, but most assuredly indolence contrived the latter: none can have any just claim, however, to the appellation, but what is emphatically called, by way of eminence, the English spaniel. The Irish insist theirs are the true English spaniel; the Welsh contend theirs are the aborigines. Be that as it may, whatever mixtures may have been since made, there were, fifty years ago, two distinct tribes — the black tanned and the orange, or lemon and white." (P. 3.) This reverend writer, who is evidently an excellent judge of the form and qualities of the setter, known *par excellence* by him as the English spaniel, is not favourable to any crosses of the pointer with the setter, and intimates that he would rather prefer having the wildest setter to break, than a dog half pointer and half setter. He also challenges any sportsman to produce an instance of a "full English spaniel," by which he means a well-bred setter, being sullen after correction. We crave pardon for not being able to carry our opinion of the temper of even the best-bred setter quite so far, as one or more instances of sulkiness in very excellent breeds have fallen under our

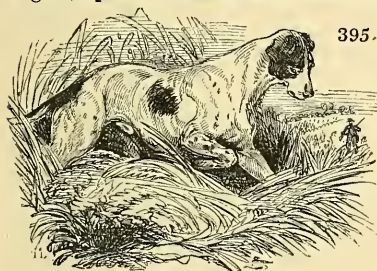
notice; but we entirely agree with him, "that their attention to the whistle, and frequent looks for guidance from the hand, discover a ready and cheerful obedience not to be equalled elsewhere." What is much in favour of the setter, also, is his extreme hardihood under exertion: his quickness likewise enables him to go over much more ground than the pointer; but it is doubtful, even though we know that his scenting powers are so great, whether the advantage may not sometimes be counterbalanced by overrunning his game, or flushing it by precipitancy. The quartering of the ground, and the *dropping in* of the setter, it has been remarked, may be the mere effect of training; but, observes the *Suffolk Sportsman*, "when one who is betrayed beyond his common sett slips back to his usual distance, that must be all sagacity, all self." Such an act must indeed be rational, and extra instinctive: but to deny the rationality of brutes, in the present advanced state of knowledge would, we presume, gain little support. The valuable properties of the setter in grouse shooting are well known; and indeed, until lately, it was almost a rarity to see a pointer on the moors. It must be confessed that the hairy protection of the setter's feet, from the sharp pressure of the ling, enables him to go through a long day's work, over moss and moor, without injury, when the pointer (at least many of them) would be knocked up. A breed of setters, the property of the Duke of Atholl, were much celebrated, and many of the Highland tourists have mentioned their perseverance, scenting powers, and tractability, in terms of admiration.

2543. *The setter is without doubt to be preferred by gentlemen who range widely, and follow shooting throughout the season with great ardour, particularly over moorlands, or the wide rangings of some agricultural counties, as Norfolk, &c.* To such the setter, particularly if a good strain be hit on, will prove invaluable. The dash of these dogs, their superior speed, and little liability to become foot sore from the hairy padding of the spaniel foot, enables them to go through vast fatigue without that shortening stroke and apathy in pursuit which will occasionally mark the hunting of the fatigued pointer, however staunch he may be when fresh. We shall conclude the history of the setter as he is seen with us of the present day by a quotation from Markham, as to his properties and his employ in the latter part of the sixteenth and the beginning of the seventeenth centuries. We shall by this account find that we must not flatter ourselves that all our present knowledge is indeed of our own getting; and it will prevent our egotism from asserting that our ancestors knew nothing. On the contrary, it will be seen that our most important uses of the dog, and the methods of training him, were practised long since; and that we have done in many respects little more than adapt them to our present rapid execution with the gun. Therefore let no one seek to depreciate the value and extent of their knowledge; it was they discovered, and we took possession of the land. "Of the setting dogges," says Gervase Markham, "I know, that in diuers places of this kingdome they are to be taught (so that most men of ability may haue them at their pleasures), yet likewise I know they are sold at such great rates and prizes, that no industrious man whatsoeuer (which ether loues the sport, or would be partaker of the benefit) but will be glad to learne how to make such a dogge himselfe, and so both saue his purse, and make his pleasure and profit both more sure and more delicate; for this I must assure all men (that buy their dogges from mercenary teachers) that euermore those salesmen doe reserue in their own bosomes some one secret or another, for the want of knowledge whereof the purchaser quickly findes his dogge imperfite, and so is forced upon euery disorder or alteration of keeping to send the dogge back to his first master anew to be reformed, which drawing on euer a new price, makes the dogges certaine price without end, without valuation. This falt to redresse, and to make euery man the true master of his owne worke, I will shew you heere, in a brieft and compendious manner, al the mysteries and secrets which lie hidde in this laboursome businesse. The first thing therefore that you must learne in this art, is to make a true election of your dogge, which you intend to apply to this purpose of setting; and in this election you shall observe, that although any dogge which is of perfit and good sent, and naturally adicted to the hunting of feathers, as whether it be the land-spaniell, water-spaniell, or else the mungrels betweene either of both those kindes, or the mungrels of either of those kindes, either with the shallow flewed hound, the tumbler, lurcher, or indeede the small bastard mastiffe may bee brought to this perfection of setting (as I haue seene by daily experience, both in this and in other nations), yet is their none so excellent indeede as the true bred land-spaniell, being of a nimble and good size, rather small than grosse, and of couragious and fierie mettall, euermore louing and desiring toyle, when toyle seemes most yrksome and wearie, which although you cannot knowe in a whelpes so yong, as it is intended he must be when you first begin to train him to this purpose, yet may you haue a strong speculation therein if you choose him from a right litter or breede, wherein by succession you haue knowne that the whole generation haue bene endued with all these qualities, as namely, that he is a strong, lusty, and nimble raundger, both of actiue foote, wanton tayle, and busie nostrill; that his toyle is without wearinesse, his search without changeablenesse, and yet that no delight nor desire transport him beyond feare or obedience; for it is the perfectest character of the most perfectest spaniell euer to be fearefull

and louing to him that is his master and keeper. I confesse I haue seene excellent rare setting dogs made in the low countries, which haue beene of a bastard tumbler's kind (for indeede a true land-spaniell is there gaysson) and indeede I haue found in them (if I may so tearme it) a greater wisdom (which indeede is but a greater feare) than in our land-spaniells; but, comparing the whole worke together, that is, the labour in raundging, the sent in finding, and the art in setting, they haue beene much inferior to our dogges, and not able to stand up with them in the lardge and spatiouse champaines, nor yet to brush through or make their waies in the sharpe thickets and troublesome couerts. To speake then, in a word, touching the best choice of this setting-dogge, let him be as neere as you can the best bredde land-spaniell that you can procure; and though some haue beene curious in obseruing of their colours, as giuing preheminance to the mottley, the liuer-hude, or the white and blacke spotted; yet, questionlesse, it is but a vaine curiosity, for no colour is amisse for this purpose, provided the naturall qualities bee perfit, and answerable for the worke to which ende you intende them." (*The Art of Fowling*, p. 264—268.)

SUBSECT. 2. *The Pointer.*

2544. *The pointer* (*Canis avicularis* Linn., fig. 395.) is principally confined to the English, Spanish, Russian, and a diminutive type known to some as the *French pointer*,



which, though beautiful, and even apt in scenting, yet being too insignificant for the sportsman's purpose, will not detain us longer. The Spanish pointer, heavy and grave as he is, will also not engage much of our attention, although his merits, which have shown themselves in a cross, either with a setter or fox-hound, by a union of strength with great scenting powers, give him much claim on our regard. The celebrated pointer dog, Dash, so admirably portrayed by Gilpin, was the produce of a Spanish pointer and a fox-hound, and the blending of the high scenting powers of the Spanish pointer, and the

dash, speed, and courage of the fox-hound, produced one of the best pointers that ever crossed a field, or ranged a moor; either as regarded speed, endurance, and such scenting powers as carried him at once up to the birds, with little quivering of the ground. He was equally good at backing, which he did in a style that gained him great admiration. It is recorded that he was sold by his master, Colonel Thornton, to Sir Richard Symons for a hundred and sixty pounds' worth of Champagne and Burgundy, a hogshead of claret, a valuable gun, and a pointer. The bargain was also made with a stipulation, that if any accident happened to him, he was to be returned to Colonel Thornton for 50 guineas. It appears that Dash did break his leg, which unfitted him for any purpose but that of breeding from, and likewise that the sporting colonel gladly received him back again at the stipulated sum. Pointers have been known in Great Britain somewhat before the commencement of the present century; and perhaps nothing can prove the value of this breed to the lovers of shooting more than the fact, that in that space of time pointers have been cultivated and have spread not only over all the British isles, but also over every part of the British dependencies. The pointer, it must be confessed, is neither so handsome nor so engaging in his manners as the setter, but he retains what is taught him longer and more completely, and his valuable acquired propensities are not infrequently transmitted to his progeny, so as to beget in some kennels a breed which might be called *self-broke* pointers; and thus well authenticated instances are not wanting of young pointers, of five and six months old, steadily backing their mothers of their own accord. We cannot answer for the exact age, but we saw in Northumberland a puppy, not half grown, do the same. Indeed, we are at present little aware of the capabilities of the brute mind, and of the numerous phenomena which judicious culture might elicit from these our humbler partners in sporting. From so respectable an authority as Dr. Shaw we venture to offer the following extraordinary proof of educational aptitude in the dog, and if our memory be correct, it is not the only one on record of a similar kind:—"The French academicians make mention of a dog of Germany which could call in an intelligible manner for tea, coffee, chocolate, &c. &c. The account was gained from an eye-witness, who was no less a person than the celebrated Leibnitz, who communicated it to the Royal Academy of France. This dog was of a middling size, and was the property of a peasant in Saxony. A little boy, the peasant's son, imagined that he perceived in the dog's voice an indistinct resemblance to certain words, and therefore took it into his head to teach him to speak. For this purpose he spared neither time nor pains with his pupil, who was about three years old when his learned education commenced; and at length he made such a progress in language, as to be able to articulate no less than thirty words. It appears, however, that

he was somewhat of a truant, and did not very willingly exert his talents, being rather pressed into the service of literature; and it was necessary that the words should be first pronounced to him each time, which he, as it were, echoed from his preceptor. Leibnitz, however, attests that he himself heard him speak; and the French academicians add, that unless they had received the testimony of so great a man as Leibnitz, they should scarcely have dared to report the circumstance. This wonderful dog was born near Zeitz in Misnia, in Saxony."

2545. *The direct origin of the pointer* is involved in much obscurity: many writers offer their suggestions, but no one offers proof; for the fact is, the pointer is, in all probability, of a very mixed origin, and in his stock, without doubt, both hound and spaniel, at different times, have borne a part: for, it has been observed, the disposition to hunt by scent exists more or less in the majority of dogs, and it is proved not only that the act of finding animals by scenting them, but also that of pointing or setting them when so found, can be cultivated in most dogs. Indeed, the teachable qualities in many other domestic animals are such as to elicit extraordinary phenomena when their abilities are pushed either by interest, enterprise, or devotion, to the service of those around them: witness the conduct of the celebrated female pig, the property of Mr. Toomer, gamekeeper to Sir Henry Mildmay; and for the truth of the following account we can vouch, from an eye-witness of the facts:—It was certainly a mere matter of accident that occasioned the development of the peculiar scenting powers of this extraordinary animal. The aptitude of swine, generally, in finding certain palatable roots under ground was well known to Toomer; nor was it unlikely by what followed that he might have entertained an opinion, that almost any keen scenting animal could be taught both to wind game, and to stand on the point towards it, and that he was therefore led to allow a female pig to accompany his young pointers in their *breaking* lessons to the field. Be that as it may, it turned out to the surprise and gratification of the intelligent keeper, that within a fortnight from her first *entrée* "she would hunt and point partridges or rabbits; and her training being much forwarded by the abundance of both, which were near the keeper's lodge, she daily improved, and in a few weeks would retrieve birds that had run as well as the best pointer; nay, her nose was superior to any pointer they ever possessed, and no two men in England had better. They hunted her principally on the moors and heaths. Slut has stood partridges, black game, pheasants, snipes, and rabbits, in the same day, but was never known to point a hare. She was seldom taken by choice more than a mile or two from the lodge, but has frequently joined them when out with their pointers, and continued with them several hours. She has sometimes stood a jack snipe when all the pointers had passed by it: she would back the dogs when they pointed, but the dogs refused to back her until spoke to, Toomer's dogs being all trained to make a general halt when the word was given, whether any dog pointed or not, so that she has been frequently standing in the midst of a field of pointers. In consequence of the dogs being not much inclined to hunt when she was with them (for they dropped their sterns, and showed symptoms of jealousy), she did not very often accompany them, except for the novelty; or when she accidentally joined them in the forest. Her pace was mostly a trot, she was seldom known to gallop, except when called to go out shooting; she would then come home off the forest at full stretch (for she was never shut up, except to prevent her being out of the sound of the call or whistle, when a party of gentlemen had appointed to see her out the next day, and which call she obeyed as readily as a dog), and be as much elated as a dog upon being shown the gun. She always expressed great pleasure when game, either dead or alive, was placed before her. She has frequently stood a single partridge at forty yards' distance, her nose in a direct line to the bird; after standing some considerable time, she would drop like a setter, still keeping her nose in an exact line, and would continue in that position until the game moved: if it took wing, she would come up to the place, and put her nose down two or three times; but if a bird ran off, she would get up and go to the place, and draw slowly after it, and when the bird stopped she would stand it as before: nor was her love of hunting confined to partridges only, but she has stood black game, pheasants, snipes, and rabbits; and has been seen to do it to all these varieties in one day. A much more detailed account of this interesting animal may be seen in *Daniel's Rural Sports*, vol. iii. p. 63. We are not tempted to make so long an extract to increase our pages, but to establish a point highly interesting to the naturalist as well as to the intelligent sportsman. It is such facts as these, and the inferences we draw from them, that enlarge our views of cause and effect, and multiply our pleasures and our resources. How few among us would, fifty years ago, have thought of harnessing dogs, and as regularly employing them not only to draw loads, but also the persons of their masters, after the manner of horses. It was these observances, and a conviction that knowledge is power, and discipline the source of obedience, that enabled Van Amburgh to luxuriate in the arms of a horde of animals, matured to a love of blood and murder, but which aptitudes were so deadened by kindness, and so softened by dependence, that they appeared happy only when in company of their conqueror. It is thus that we train dogs to our purposes for

hunting, and by some it is so effectually done, that the habitudes they are taught become so interwoven into the frame, if we may so express it, of body and mind, that they are afterwards voluntarily enacted by their offspring as they approach maturity. In some breeds, all the young ones, before they arrive to their full growth, and before they have had a training lesson, will stand to game; and some that show a still greater share of precocity will also back at the same age.

2546. *Crossing the pointer.* Without doubt much improvement of this breed has been derived from judicious crossings. He has gained much power of nose from his relationship, and when any otherwise valuable breed appears to retrograde in this respect, it would be well again to cross with a Spanish pointer. A cross between the pointer and the setter is generally either very good, or it is very bad; only now and then, however, it is the former, and then the produce may have the gallant bearing, scent, and endurance of the setter, with the steadiness and erect index of the pointer. Some patronise the double nosed French pointer, under a supposition that having, according to his name, two noses, he must have a double portion of olfactory power; but such opinion is erroneous, as only a slight inspection will convince the examiner, that it is only what has arisen from an accidental division of the fleshy nose, and slight part of the cartilaginous nose also, which having healed thus has been afterwards propagated in future breedings. Innumerable instances of much greater monstrosities than this have been continued in the breed of some animals, as is witnessed in the crooked legs of the ancon and dunkey sheep, in the hornless cattle, and the wry legged terrier; which, with many others, are common among us. It is to be observed that, as far as our own experience goes, the pointer and setter cross have a lurking propensity to crouch, particularly when hunting in potatoes, turnips, colewort, &c. In Ireland we used to shoot in company with a brother officer who shot to a dog of this kind, and as quails, landrails, together with partridges, &c. affect those covers much (for in many parts there the land is deeply trenched, and the crops as highly raised), it follows, that a low crouching dog is an inconvenience, although the red hue of the animal was usually conspicuous.

2547. *The Russian pointer*, as so called, is in our opinion a mongrel; and only now and then does he exhibit the qualities we seek for in a pointer. He is rough coated, grim visaged, a little dogged in disposition: nevertheless, we have seen a few, and but a few, specimens of hard workers and steady pointers at game. The pot-hunter, however, will find them convenient, for as has been said of a universal sportsman, he will hunt every thing, from the elephant of the field to the flea of the blanket. In truth, those who do not study appearances, and live in a wild country, far from the busy haunts of men, perhaps, can hardly do better than cultivate this breed, as the individuals are hardy, and many of them eager pursuers of wildfowl, and ready carriers of it. A half-pay officer that we met with in our tourisings through the northern counties, showed us one of this kind, which, by his own account and that of his neighbours also, who vouched for the same, was a wonder; for he actually more than half supported the family by his versatility of talent. He was at once a setter, a pointer, a spaniel, and water dog. He was likewise a retriever of the first order, performing in all these distinct characters with an adroitness that surprised strangers, as was apparent from some one offering 25 guineas for him; the refusal to take which, as we were told, was coupled with something like this reason, that as he (the dog) was worth so much to him, but would not be worth half so much to any other, he could not consent either to injure his dog or the purchaser.

SUBJECT. 3. *The Spaniel.*

396



LARGE WATER AND LAND SPANIELS.

2548. *The spaniel* (*Can. fam. extrarius* Linn., fig. 396.) is a dog of much antiquity, and one whose breed seems to have been particularly attended to in various countries, particularly the eastern. In the Levant all game was either taken with the net or brought

down by the gun; and they appear to have possessed spaniels of different varieties, but so excellent, that the greatest pains were taken to improve and increase the breeds. For its fidelity the spaniel has gained the particular notice of mankind and of crowned heads; even the chief order of Denmark (now called the order of the elephant) was instituted in memory of a spaniel named Wildbrat, who had showed attachment to the monarch when deserted by his subjects: the motto to this order was (and which still remains), "Wildbrat was faithful." A circumstance noted in the early part of the English history, and also connected with Denmark, may be added with propriety, inasmuch as it proves that one of the landings of the Danes in England was occasioned by the sagacity and affection of a spaniel. Lodebroch, of the blood royal of Denmark, and father to Humbar and Hubba, being in a boat with his hawks and his dog, was, by an unexpected storm, driven on the coast of Norfolk, where being discovered, and suspected as a spy, he was brought to Edmund, at that time king of the East Angles. Making himself known, he was treated with great hospitality by the monarch, and particularly so on account of his dexterous skill in hawking and hunting. The king's falconer grew jealous of this attention; and lest it should lessen his merit in his royal master's opinion, and so deprive him of his place, had the treachery to waylay Lodebroch and murder him, and conceal the body amongst some bushes. He was presently missed at court, and the king manifested great impatience to know what was become of him; when his dog, who had staid in the wood by the corpse of his master till famine forced him thence, came and fawned on the king, and enticed him to follow him. The body was found; and by a chain of evidence the murderer was discovered. As a just punishment, he was placed alone in Lodebroch's boat, and committed to the mercy of the sea, which bore him to the very shore the prince had quitted. The boat was recognised, and the assassin, to avoid the torture, falsely confessed that Lodebroch had been put to death by the order of Edmund; which account so exasperated the Danes, that, to revenge his murder, they invaded England. Mr. Daniel, to whom we are indebted for this anecdote, was himself very celebrated for a breed of spaniels that was almost unrivalled, and commanded enormous prices when sold. We were personally acquainted with this gentleman, and, as an enthusiastic and efficient sportsman, few if any could excel him, particularly in the practice of shooting and its various connections. The Rev. Mr. Corsellis we also knew; and as we lived in Essex within a visiting distance of each other, we can answer for his sportsmanlike qualities, and for the truth of the following anecdote recorded by Mr. Daniel; which, as it immediately relates to the amiable properties of the animal we are now treating of, cannot be considered out of place:—"The gamekeeper of Mr. Corsellis had reared a spaniel, which was his constant attendant, both by day and night: whenever old Daniel, the keeper, appeared, Dash was close beside him; and the dog was of infinite use in his nocturnal excursions. The game at that season he never regarded, although in the daytime no spaniel would find it in a better style, or in greater quantity; but at night, if a strange foot had entered any of the coverts, Dash, by a significant whine, informed his master that the enemy was abroad; and many poachers have been detected and caught from this singular intelligence. After many years' friendly connection, old Daniel was seized with a disease which terminated in a consumption and his death: whilst the slow but fatal progress of his disorder allowed him to crawl about, Dash, as usual, followed his footsteps; and when nature was still further exhausted, and he took to his bed, at the foot of it unwearily attended the faithful animal; and when he died, the dog would not quit the body, but lay upon the bed by its side. It was with difficulty he was tempted to eat any food; and although, after the burial, he was taken to the hall, and caressed with all the tenderness which so fond an attachment naturally called forth, he took every opportunity to steal back to the room in the cottage where his old master breathed his last: here he would remain for hours; from thence he daily visited his grave; and at the end of fourteen days, notwithstanding every kindness and attention shown him, he died literally broken-hearted." (*Rural Sports*, vol. iii. p. 348.)

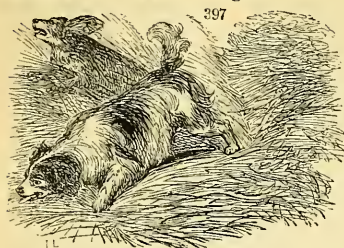
2549. *The spaniel has been divided into more varieties than any other dog*, not even excepting the hound. For though the lapses between the gigantic staghound and the lapdog beagle are great, they cannot compare with those which interpose between the Alpine spaniel and the diminutive spaniel breeds to be met with, some of them of less than five pounds' weight. Of these latter pet breeds the supposed rarity is so great, that 30, 40, and 50 guineas have been given for one; and if we dare believe the accounts as they are rendered to us, much higher prices have been received by crack breeders for unique specimens from spaniel fanciers than those we have mentioned. The old Marquis of Granby was the owner of a very celebrated breed; and in later times the Duke of Marlborough, and his descendants, have been famed for what was known as the Blenheim breed: and the late Lady Charles Spencer, with whom we were on terms of intimacy, kept numbers of them, and was so devoted to their welfare, that, we believe, she never wore a pin in any part of her dress, fearing that it might be accidentally the means of wounding one of these favourites. They were, one and all, red and white, zealous hunters in the field, but required much trouble to break. A still more notorious variety was the black and tan spaniel of King Charles,

which continued to be cultivated with such jealous care by the late Duke of Norfolk, that no interest could obtain one without a strict injunction from the owner, and almost a solemn promise from the receiver, that he or she would not breed from it in the direct line. The late Duchess of York, who honoured us with much condescending notice by sending for us frequently to Oatlands, either to consult us on the ailments of the poor around her, or on her brute favourites, of which it is well known she had a varied assemblage, afforded us a striking proof of what we have stated. On one occasion, when we were accompanying her royal highness to her menagerie, with almost a kennel of canine favourites behind her, after drawing our attention to a jet black pug pup she had just received from Germany, she remarked that she was going to show me what she considered a present of much greater rarity, which was a true spaniel of the king Charles's breed, sent to her by the Duke of Norfolk; "But," she observed, "would you believe he could be so ungallant as to write word, that he must have a positive promise, not from myself, but from the Duke of York, that I should not breed from it in the direct line?" It would almost seem that the word of ladies of high rank was not in equal estimation with that of the gentlemen of the same rank, at least that Norfolk's duke did not think it so; for it happened a very little time after, when professionally waiting on the Princess Sophia of Gloucester, her royal highness also showed us a very fine young spaniel of the Norfolk breed, which she likewise observed was only presented by the duke on an understanding, guaranteed not by herself but by her brother the Duke of Gloucester, that it should not be bred from in the Charles's line. Whatever view we take of these restrictive attempts, we may however be assured, that Nature will frustrate them; for not only is the Norfolk breed, but the Blenheim also, sufficiently common at the present time; and they ought to be, for both are great ornaments to the race, and make very many springers. We think it our duty likewise to observe, that however some ladies might not think themselves strictly bound by an agreement on such a subject, we feel assured that neither of those we have noticed on this occasion would have done other than strictly abide by the compact; and we are confident that those who were much better acquainted with them than we could possibly be, would bear us out in our assertion.

2550. *The varieties of the spaniel are numerous*, but those only immediately engaged in sporting will occupy our particular attention. A popular distinction made between them by many writers is into springers, cockers, and water spaniels. Conventionally this distinction is understood, but critically it will not bear examination, particularly as regards the two first divisions. The *Suffolk Sportsman*, whom we consider as no mean authority, heads his account of this dog as the springing spaniel, and then commences it thus:—"The cocking or gun spaniel of true perfect breed is of one general or whole colour; either black or black-tan, commonly called King Charles's breed; or red in different shades, paler or deeper," &c. &c. and concludes with "legs short, and breeches behind." Captain Brown, a very creditable authority, but in this instance taking much too confined a view of the spaniel race, says, "The true English-bred spaniel differs but little in figure from the setter, except in size, he being not so tall; but the chief difference between them consists in the former having a larger head than the latter in proportion to the bulk of his body: they vary also in a small degree in point of colour, from red, yellow, or liver-colour, and white, which seem to be the invariable standard of the breed. They are nearly two-fifths less in height and strength than the setter, their form being more delicate, their ears longer, very soft and pliable, and covered with a coat of long waving and silky hair; the nose is red or black, the latter being the surest mark of high breeding; the tail is bushy and pendulous, and is always in motion when employed in pursuit of game." (*Anecdotes of Dogs*, p. 254.) It is evident Captain Brown here thought only of the large sporting spaniel. Both springers and cockers are used in greyhound coursing, and the excellent scenting qualities of each usually enables them to find every hare within their beat. Here the cocker is more useful than the springer, for he hunts closer, and often whimpers before he opens, which awakens attention; the large springer, on the contrary, by his ardour and bustle alarms a distant hare, who steals away unseen. The yaffing of the little one she often does not mind until it is almost upon her. Of all the dogs reared, no one is more varied in figure and qualities than the spaniel, nor is any dog so universally in request as this. We have computed that five thousand are kept as parlour pets in London alone. Taking the breed throughout, there is more ability displayed, more energy of character apparent, and more genuine attachment shown, in this race to man, than is to be found in any other whatever. When we say this, we include the whole family of spaniels generally, from the Alpine monster to the diminutive darling of my Lady *****, bought of a Spitalfields weaver at the low price of 25 guineas. Regard the poodle, — where shall we find a match for his intelligence, and where his equal in fervent attachment? We have elsewhere shown him acting the part of a footman with singular adroitness; but we must return to the cocker, equally faithful, and but little less intelligent.

2551. *The cocker*, so called from his appropriation to woodcock shooting, has a short round head when compared with that of the springer; he is also much smaller in size, more

compact in his frame, and not high on his legs. His ears are usually long and well feathered, as are also his legs and tail : his hair likewise, generally, is more waved and curled



COCKER SPANIEL.

than that of the springer spaniel. The cocker of the present day (*fig. 397.*) is very diversified in his colour, occasionally he is an entire black, and then he is, indeed, a beautiful animal. The late Lord Rivers was celebrated for a breed of black and white cockers, and one we received as a present from him turned out to be most excellent in the field, and was shot to by us with less breaking than any other we ever remember, which tractability we attributed to the circumstance of his living under our immediate eye as a parlour pet. This was the dog elsewhere noticed, when treating on the general subject of dog breeding (p. 412.), that occasioned a

pug bitch, by the mere force of imagination and fondness for this spaniel, to conceive and bring forth one milk-white true pug pup out of a litter of six.

2552. *The breaking of the spaniel* exemplifies the force of education and discipline among the most mercurial of the canine race. The extreme alertness with which the cocker hunts out and flushes woodcocks, &c. though he will not touch their flesh or bones when set before him as food, are proofs of his instinctive fondness for hunting for his own amusement, as his after conduct, when broken in, proves how subservient he is to the interest and amusement of his master. Nor are his general teachable qualities to be overlooked ; he has, on the contrary, been educated to a surprising degree of ingenuity in point of general action, and particularly in his methods of circumventing the wiles of his prey. The observant and humane sportsman cannot forget, or do other than admire, his many interesting and winning ways, and particularly his thorough devotion to his employer's purposes in the pursuit of game, which is such, that, having made his capture, many of his tribe bring it to the hand of the master : indeed, no spaniel can be considered as thoroughly trained that does not do this. In breaking this dog, we again repeat, that it is prudent to commence the process from his very puppyhood, and the process would be better and more easily effected were he never away from his master's presence. Every one who knows the dog is aware that, from his teachable qualities, he may be taught to fetch from and carry to a distance whatever is required. He will fondle the kitten of the petted cat, because he sees his master do it ; and he may possibly give a sly gripe to the one he meets in the barn, because he sees it is not noticed ; which act, although we cannot commend it, yet is a great proof of his intelligence. He should, when intended for sporting uses, be taken out very early to the field, as at four or five months old, when he ought to be allowed to race about and hunt every thing that moves ; and the signal for breaking should not be made until he has evinced a predilection in choosing the objects. As soon as he begins to hunt fowls, in preference to other living objects, as rats, &c. immediately commence his training lessons, the first of which is, that now he is to chase at your command only, and that the animals he hunts should be such as you will habituate him to, and not those he might choose for himself. Having been thoroughly initiated in this subserviency to your sporting pursuits, he is next to be taught to "fetch and carry ;" and that, in doing this, he shall not tear or spoil his game, or whatever he may have in his mouth. We remember to have seen an admirable instance of this care and attention to the nature of the object carried. Sitting with a friend in his drawing-room, which overlooked a small lawn, we were amused with the gambols of a favourite spaniel, which we saw employing himself in tearing into shreds a kitchen cloth. Within twenty minutes from the time when this scene was enacted, the same spaniel came bounding into the drawing-room with his mistress's cambric pocket-handkerchief in his mouth, neither moistened with saliva, nor marked with his teeth, for, as somewhat of an enthusiast in our admiration of the qualities of the dog, we carefully examined the handkerchief, having already given it as our opinion (but which was only tacitly assented to), that not a tooth-hole would be found ; and such was the case.

2553. *The water spaniel (Canis Aquaticus Linn.).* This dog may be represented as a sturdy spaniel with crisped hair, taller or more low in stature, according to the nature of his work. If the sportsman shoots on the banks of rivers, moors, or lakes, his dog should be of the size and strength of the poodle. Some, indeed, shoot to the poodle ; and now and then one is found excellent : but they are not often so fond of the sport of hunting out the retreat of waterfowl as the true water spaniel ; for they have, generally speaking, less mettle and less endurance. The water spaniel should be very stout, strong, courageous, and semi-aquatic, particularly if it is to be used for wildfowl shooting on the sea-coast, or on lakes, or large rivers. Markham's description of the water dogge, as he calls this spaniel, shows that in this early time it had long been used ; and his training instructions are so excellent, and so applicable to every dog that is to be broken to the gun, that we shall transcribe them. He commences with, "The water dogge is a creature of such general

vse, and so frequent in vse amongst vs heere in England, that it is needlesse to make any large description of him; the rather since not any amongst vs is so simple that he cannot say when he seeth him, This is a water dogge, or a dogge bred for the water; yet, because in this (as in other creatures) there are other characters and formes which pretend more excellencie, and figure a greater height of vertue then others doe, I will heere describe as neere as I can the best proportion of a perfect water dogge. First, for the colour of the best water dogge, all bee it some (which are curious in all things) will ascribe more excellencie to one colour then to another, as the blacke to be the best and hardest, the lyuer-hued swiftest in swimming, and the pyed or spotted dogge quickest of scent; yet in truth it is nothinge so, for all colours are alike, and so a dogge of any of the former colours may bee excellent good dogges, and of any may bee most notable cures, according to their first ordering and trayning; for instruction is the liquor wherewith they are seasoned, and if they bee well handled at first, they will euer smell of that discretion; and if they bee ill handled, they will euer sinke of that folly; for nature is a true mistresse, and bestowes her giufts freely, and it is onely nature which abuseth them." From this Markham proceeds to describe the proportions, shape, and covering of what he calls the water dogge, and then offers, after the fashion of those times, a rude but not bad representation of a poodle shorn; and which shearing, according to his description, may be performed in two ways. But we will not neutralise his own amusing and interesting account by our own notices, but allow him to speak for himself. "Now, for the cutting or shearing him from the nauill downward, or backward, it is two wayes well to bee allowed of, that is, for sommer hunting, or for wager; because these water dogges naturally are euer most laden with haire on the hinder parts, nature as it were labouring to defend that part most, which is continually to bee employed in the most extremity; and because the hinder parts are euer deeper in the water then the fore parts, therefore nature hath given them the greatest armour of haire to defend the wette and coldnesse; yet this defence in the sommer time by the violence of the heate of the sunne and the greatnesse of the dogge's labour is very noysome and troublesome, and not onely maketh him sooner to faint and give over his sporte, but also makes him, by his overheating, more subject to take the maungie. And so likewise in matter of wager, it is a very heavy burthen to the dogge, and makes him to swimme lesse nimble and slower, besides the former offences before recited: but for the cutting or shaving of a dogge all quite ouer, even from the foote to the nostrill, that I utterly dislike; for it not onely takes from him the generall benefits which nature hath lent him, but also brings such a tendernes and chilnesse ouer all his body, that the water in the ende will grow yrksome unto him." (P. 70.)

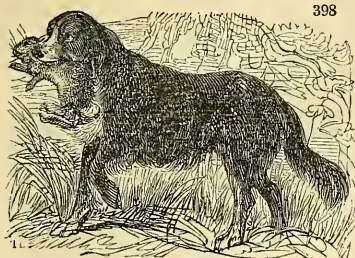
2554. *The manner of training the water spaniel* is so ably discoursed on by Markham, that we think it well worthy the attention of every dog breaker and dog breeder of the present day: — "Now, for the manner of trayning or bringing up of his water dogge, it is to be vnderstood that you cannot beginne too early with him; that is to say, even when you first weane him, and teache him to lappe, for euen then you shall beginne to teache him to couth and lye close, not daring to stirre or moue from that posture in which you put it, without your especiall license, cherrishing it euer when it doth your wille, and correcting it when it doth the contrary; and alwayes obseruing this maxime in the first teaching of him, that you neuer let your dogge eate or taste any meate, but when hee doth something to deserue it, that custom may make it know foode is a thing which cometh not by chance, or the bounty of your hand, but for reward or meritt when hee doth your commandment, and this will not onely make him willinge to learne, but apt to remember and retayne what hee learneth, and diligently to performe your pleasure without stickie or amazement, the caracters of your commands being so deeply imprinted in his knowledge; and to this end you must haue no more teachers, no more feeders, cherrishers, or correcters but one, — for multiplicity breeds confusion, and to teache diuers wayes is to teache no waye well: also you must be very constant to the words of directions by which you teache, chusing such as are the most sygnificant for your purpose, and fittest for the action you would haue the dogge doe, and by no meanes alter that word which you first vse. When, therefore, you haue made your whelp vnderstand these seuerall soundes or wordes, and that he will coutehe and lye downe at your feete, how you please, when you please, and as long as you please, and that with a single worde, or a looke onely, you shall then proceede and teach him to leade in a line and collar, following you at your heeles in decent and comely order, nether treading vpon your heeles, or going before or side by you, which shewes too much haste, nor hanging hacke or straying your line by the meanes of too much sloathe, but following in decent and orderly manner without offence either to the dogge or his leader, and this kind of leading is to make the whelp familiar with you, that he may loue and acknowledge you and no man else. When this generall obedience is taught (which is done by obseruation of his going, and moueing him by sights or sports which may tempt him to stay beyonde his boundes, and then to correct his offences, and to cherrish and reward his obedience), you shall then teach him to fetch and carry any thing you shall throw forth of your hand." (P. 173.) Our ancient adds much other practical matter

on the subject, particularly we would recommend him for his humanity, proved by his advocating the necessity, that his readers should, with their words of reprehension when necessary, "also join encouragement," humanely remarking, that "correction may better be spared than cherrishings." Listen to this, you hired breakers! Markham lays much stress likewise on leading the dog with a line, making him handy at fetching and carrying, and, when returning on his track, that he search for any thing left behind. In short, he is to be taught not only to do your bidding in every thing, but also to appear to divine your wants ere they are expressed, and which is actually done by very intelligent dogs, as thus:—You are out for certain sporting purposes, as shooting of wildfowl for instance; a teal rises, you fire, and the bird escapes at the time, but not without a certain conviction remaining in your mind that you have hit it. Your dog follows the track at your showing, but at length returns without it: still you are convinced, to a certain degree, that his escape is not complete. You hesitate, and half turn towards the spot from whence you so lately came, after a fruitless search; your dog watches all this, and assures himself of your meaning. You turn, it is true, towards the spot; but incertitude prevents you going but a few steps towards it. Your dog looks wistfully in your face, and without any manner of doubt he divines your meaning, but will not stir without a signal. You waive your hand, with "Lost, good Sancho!" he instantly flies back, again he swims the stream, again he searches the rushes still further a-field than he ventured before. Certain both of the intelligence and the fidelity of his dog, the weary sportsman sits him down on a bank, and in twenty minutes, after a long search and many a dive and swim, Sancho is seen returning with the bird judiciously pinched to prevent any chance of escape, but with hardly a feather ruffled. This is not a fancy tale, but has been enacted in our sight; and 10 guineas had more than once been refused by the owner, who was an officer in the Artillery, for this accomplished dog.

2555. *The Newfoundland dog* is a spaniel much employed on the southern coasts of our kingdom; and there appear to be two distinct breeds of them, one from Labrador, and another from St. John's. The Labrador dog is very large, rough haired, and carries his tail high. On his native spot, he is exceedingly useful by his immense strength in drawing sledges, &c. The St. John's breed is that to be preferred by the sportsman on every account, being smaller, more easily managed, and sagacious in the extreme. His scenting powers also are great. Some years ago these dogs could be readily procured at Poole, and, when well broken in, were very valuable; indeed, some gentlemen who purchased them have found them so intelligent, so faithful, and so capable of general instruction, that they have given up most other sporting varieties, and contented themselves with these; and, as we are told, found the places of the others perfectly well filled up. This circumstance, however, we should observe, occurred in fenny and aquatic districts principally. A genuine Newfoundland dog of the true water-loving sort, and addicted, body and mind, to hunting wildfowl, is most valuable. We once knew such an one, the property of a gentleman of our acquaintance, who resided at Newhaven. We ourselves lived at that time at Seaford, but we visited Newhaven very frequently, and sometimes went along the sea wall, and in so doing we often fell in with this admirable zealot. Whenever it was likely that wildfowl would come in shore, and that consequently gunners would go along the levels to intercept them, then she was sure to be found, waiting for and attending on them as long as they staid, fetching either out of the sea or the river, spite of ice or snow, any that were shot. She had been known to stay two entire days and nights, and, as was supposed, without food, waiting at the shore-side to assist any shooting parties that might go out; for at the time we allude to an intense frost of two or three weeks had frozen up every river and spring. Hers was indeed self-devotion, and she truly had a sporting mania. Many had offered to purchase her, and many more had attempted to steal her; but her master, although he shot little himself, was proud of his dog, and would not be bribed by money; and no force, no artifice, could draw her farther from her home, than her knowledge of the locality, and her distance from Newhaven were known to her. Colonel Hawker also writes very interestingly, and very justly, on the properties of the Newfoundland dog, which he says are such, that he may be broken into any kind of shooting. The one we have just noticed, we would have almost wagered our existence, would, after a fortnight's tutorage, have hunted partridges, pointed them steadily, and would then have waited the bidding to fetch the dropped bird. As a retriever the Newfoundland dog is easily brought to do almost any thing that is required of him, and he is so tractable likewise, that, with the least possible trouble, he may be safely taken among pointers to the field, with whose province he will not interfere, but will be overjoyed to be allowed to look up the wounded game, which he will do with a perseverance that no speed and no distance can slacken, nor any hedge-row baulk. In cover he is very useful: some indeed shoot woodcocks to a Newfoundlander; and he never shines more than when he is returning with a woodcock, pheasant, or hare, in his mouth, which he yields up, or even puts into your hand un-mutilated.

SUBJECT. 4. *The Retriever.*

2556. *The retriever* (fig. 398.) is rather an indefinite dog, *i. e.* he owns no fixed parentage, but may be generated by any congenial varieties, as the spaniel and Newfoundlander,



the spaniel and poodle, &c. One parent, at least, should be stiffly coated, tough skinned, and moderately high on the leg; and it is also essential that both parents be very hardy, of excellent scent, and zealous in the pursuit of game. It is of the first consequence that the retriever be under such command, as never to stir in pursuit of any game until a signal is made for him to start. He should be a very Proteus, and able to enact, on occasion, the part of each of the dogs of the group we have been describing. Neither is it so difficult, as may be supposed, to accomplish all this (if you work on a good stock) so to break, and so to tutor a dog of mixed breed, that he shall

make a moderate pointer, a still better setter, and a handy hunter in cover in the pursuit of wounded game. One look of your eye, and one motion of your hand, should convert him into a springer amidst the tanglings of the wood and briars, or send him headlong into the water to recover a fowl. He should be a very Janus, a complete Argus, and gifted with the talent of ubiquity, so that he may be here, there, and every where, and yet never out of place. We have seen such a Proteus; but he belonged to a sportsman of unusual tact, and such a dog breaker as we never before saw; and yet he prided himself on very seldom using a whip; indeed his dogs, one and all without an exception, appeared to worship him as it were; such was the zeal of each to do his master's bidding. This gentleman recommended that where the locality principally consisted of inclosed grounds and stiff covers, the retriever employed should be a cross breed, between a setter and Newfoundlander. We have also known a cross between the pointer and Newfoundlander, for generating a retriever, to be recommended; but although a thoroughly good pointer is invaluable, yet, in the way of a cross, his progeny, as far as our experience goes, is not often of great value. The vulgarism, that "it is not one swallow that makes a summer," applies here; for it is possible that such a mixture may have turned out well, but we never heard of one. Mr. Gilbert Forrester informs us, that he has known some good shots who have bred their retrievers from a cross of the spaniel and old southern blue mottled hound; but he does not approve of the mixture, and we should have been surprised if so excellent a sportsman had done so. Indeed, we should have anticipated the result which he says took place, that the cross partook too much of the one breed or the other; and therefore he has known, in localities where game was plentiful, that one so bred, when footing a wounded hare through a wood, has changed his chase to a fresh hare which started before him, opening as he went for half an hour ere he returned, and thus depriving his master both of the wounded and the unwounded hare: if, on the contrary, too much of the spaniel blood prevails, away he springs and at an immense rate, yelping as he goes, to the springing of every covey, and the pushing of every pheasant in his road.

2557. *Of the importance of the retriever* we need not say much, as the subject speaks for itself. The thorough sportsman is not content without dogs adapted to each variety of sporting, nor is he happy unless each variety is confined to his own particular chase. We knew one of this stamp, who, when ranging with his pointers in advance, was always followed by a retriever of very rare qualities. His pointers, also, did their duty to admiration, and when they came to a steady point, bang from each barrel followed, and two birds usually fell; the pointers remained on the spot motionless witnesses. A move of the sportsman's hand, and a *Hie away!* to the retriever, sent him off like lightning, and he returned with both birds. The ability of this dog was such, that when two birds fell he would hold one by the neck, and the other by the wing near to the body; by which device neither bird would be injured, nor himself encumbered. In pheasant shooting, likewise, the excellent discipline of this dog, and his extraordinary tact, were the delight of all who saw his performances. What was in him most to be admired, was the perfection of his training. In ordinary cases he appeared a totally indifferent spectator at the heels of his master, although, when necessary, he could enact equally well the parts of pointer, setter, or spaniel, and he wanted a signal only to do so. His setters and his spaniels, like his pointers, were well bred, and thoroughly well broken, particularly his setters; for we need not hint to the well practised sportsman, that, let his spaniels be as well bred as they may, and that they also have had every advantage of discipline under such a breaker, yet there is such a natural impatience in these dogs, such fire and mettle, when on the pursuit of game, that they will hunt out of bounds, or, scorning restraint, will fly to the dropped pheasant, and, if any life remains, will mouth and probably mangle him. The retriever

we have noticed, aware of this, the moment the master's signal was given to him, and his call to the spaniels "Ware bird!" flew up, and commonly returned with the pheasant in excellent preservation. It is not the mere bringing the birds to bag that will suffice the talented sportsman. The pig killer, who has cut the throats of fifty pigs within the last hour, or the butcher's feller, who has brought to the ground his dozens of noble oxen before dinner, may boast of his bloody deeds: but his boast is but the measure of his brutal employ; and when the sportsman is heard to boast how the feathers flew in the air, and how the birds were knocked down, right and left, we are apt to think that he also has sunk the gentleman, and apes the pig killer and ox feller. It is the creed of the reflecting sportsman, that Nature's boundless stores being open before him, and that, being by his superior intelligence apprised that he is unquestionably placed over them, it follows, that he proceeds with his fellows in making such use as shall bring the waste and the supply to an equality; and that, so doing, he fulfils the purpose of his existence. By pursuing game he prevents its destructive increase, and by doing it in moderation only, he neither commits a robbery on society by destroying them wholly, nor deprives others of a share in the sports he enjoys himself.

SUBJECT. 5. *Breeding, Breaking, and Training Spaniels, Setters, and Pointers.*

2558. *The breeding and rearing of these dogs*, as a subject, will not detain us long here, as all necessary instructions are included in the breeding and rearing of hounds and greyhounds, p. 411. 572. The setter is a dog of much beauty and commanding mien: divested of his wavy curling coat, he would not differ very materially in figure from a well bred pointer. One distinguishing feature which he presents is his fine head, open countenance, and broad flowing ears; his loins, however, are not so broad as those of the pointer, and this probably gives him more liberty of action, without detracting from his strength, which is not only great under momentary exertion, but is lasting also, as we witness by his unceasing exertions on the moors. Mr. Elwes, a name of great notoriety where sporting dogs were concerned, used to let his setters follow his carriage from his house to London; and although the distance was sixty miles, they usually hunted all the road-side fields in their journey. Setters are now seen of all the colours shown by our spaniels, and though fancy has attributed much to one particular tint, or one particular marking, experience has not put its stamp thereon, but verified the old adage, "that a good dog, like a good horse, cannot be of a bad colour."

2559. *The breeding and rearing of the pointer*, also, may be referred to the same source we have already named. As regards both these dogs, the utmost attention should be paid to the purity of breed in the parents, and likewise to their field qualifications, which commonly descend with the progeny; and hence it is so common to say, whatever you do, breed from a "good strain," and by so doing you are almost sure of a good result. The colour of the pointer, *à priori*, would seem to be of little consequence to himself or to his qualities; but, as we have already shown, the colour in both these dogs is, nevertheless, of some import in the field. In very close cover a white pointer runs little danger of being shot, nor a white setter in the thickest ling; but in both situations black and liver colours, as hiding their figures, might endanger them. The pointer should present a round well marked head, neither small nor large. His face should be open, his nostrils large, and his eyes full; his ears should be thin, and of a due length, but they should in every case hang close to his head; for if they fold back, we should suspect the get. His chest should be deep, his shoulders fine, and surmounted by a neck of sufficient length. Mark well his legs: the fore arm should be muscular, and run straight down to his fore feet, which should be well clawed, and in figure round and compact, and if of a dark hue so much the better for their wear. His coat we would have very fine, but we would dispense with that fineness of loin in the pointer which we should esteem a beauty in a setter or greyhound, for muscular fulness of loin in the high bred pointer is desirable. The thighs should be full, without being coarse, and they should be surmounted by a fine taper stern, from which, when the young ones are a few weeks old, an inch may be taken off, proportionate with the relative length of the body and the taste of the owner. A very long tail in a pointer is not convenient, for in close cover it gets torn, thence bloody, and afterwards sore and mangy; nor is a short one sightly. In taking off the end of the tail many sportsmen draw out the tendinous portions which present themselves with a pair of pliers, by which the tail is supposed to be carried higher; but remember that, to produce this effect, it is necessary to extract the lower tendinous filaments, and not the upper. A full sized breed of pointers will bear to be sternal two inches; a small breed will bear the loss of one inch and a half. Watch the growing dog: see that his coat remains clean: if the hair falls, and he scratches much, dress him with brimstone, and somewhat lower his diet. Instead of flesh feeding, give him buttermilk and boiled potatoes. Let his exercise and his feeding correspond, and commence his field education early, by which you will be spared the trouble of unlearning him.

2560. *In the breaking and training these different dogs (fig. 399.), there is so much similarity of method, that we shall commence by including the whole group as subjects to be*



BREAKING AND TRAINING.

disciplined in essentials on one system. What variations do occur in the training processes necessary to be observed towards them individually, either as regards the particular mode of hunting common to each kind of dog, or required by the nature of the game they are to hunt, either have been, or will be, duly noted. There are however, we repeat, lessons in dog training which concern them all individually and generally; one and all should be taught perfect and unconditional obedience, which is more likely to be insured where they have been bred by the owner himself, and from a strain of acknowledged excellence, known to have been long kept up, pure and unmixed, under the watchful eye of the master, aided by the cooperation of some faithful and intelligent kennel attendant. Having been thus bred, and their affections being fully engaged by their master particularly, and by the subordinates generally, the foundation of their excellence is already laid. No service is so well performed, no lesson is so deeply impressed on the mind, as is that taught by those who have engaged our affections. In dogs this is every day witnessed, and, in almost every one, kind words and encouraging treatment will win to the purpose required. It may be asked, Are they never to be corrected? By no means give up correction where enticement has failed. Let a great fault be corrected on the spot; and, if practicable, by an attendant rather than the master. Let it be severe as regards the pain it gives, but let it not be of a kind likely to injure the animal. A supple switch, or thonged whip, may be used; but kicks, or hedge-stakes broken over a dog, should never be allowed. We again repeat, that the devotion towards the purposes of the master, and the superexcellence in the manner of fulfilling them which marks some dogs, is usually the result of personal attention paid to them and their wants. We will not suppose that such a master actually feeds them himself; but we can readily imagine that he is always present at their principal meals, and that the dogs observe that he takes a prominent part in the affair. He orders Ponto, who he says looks thin, a second mess; and we know that the sagacity of the dog is such as to readily distinguish the addition as a boon bestowed by the master, and which is therefore appreciated, accordingly, with gratitude and willing attention to his biddings. Sancho, on the contrary, he orders away with half a meal, for snapping at a half-grown puppy; and he retires cowed and self-convicted.

2561. *The breeding of sporting dogs under our own eye, particularly those for shooting purposes, gives us an eminent advantage over dogs bred by others, which, though bought at a long price, may have a stain in the get that will wholly frustrate our hopes. When we breed from our own stock, or from one every member of which we well know, we then insure the purity of the strain we raise; and, by an early acquaintance with them, we rivet the confidence of each, and receive their willing services in return for our notices. The subject of dog breeding to the zealous sportsman must of necessity be a very important one, for the dog to him is an article of necessity as well as of luxury. Of the breeding and rearing of dogs generally, we have, as before observed, already treated fully, together with kennelling and dieting them, both in our treatise on *Fox Hunting*, p. 411. and that of *Coursing*, p. 572. to which we would refer for all necessary particulars on those heads.*

2562. *The methods of dog breaking are, with very little variation, the same at the present day as they were in the days of Markham, who notices them as not new even in his time; for he calls his *Hunger's Prevention*, published in 1621, a "Worke long by me thought vpon, and long by many of my dearest friends vrged vpon," &c. &c. Indeed, there are recorded practices of the olden sportsmen, almost a century antecedent to this, to be met with, both in foreign libraries and, if we mistake not, in that also appended to the British Museum. We therefore certainly have no lack of instructions on this subject, so important to the lovers of*

the trigger. Those interesting monthly publications, the *Sporting Magazines, Old and New*, contain very many excellent articles on dog breeding and training. Other of our sporting tomes notice the subject, and yield us a wrinkle; and thus, if we do not find much novelty, we have at least the same instructions doubly stamped on our memories, and they are consequently less liable to be rubbed out. At all events, those among us who cannot add to the general stock, can at least pull to pieces our antecedents: it is thus that we find the *Treatise on Dog Breaking*, by Floyd, gamekeeper to Sir John Sebright, sadly mauled by some critics. We had read the pamphlet with much pleasure; and, if it did not meet our unqualified approbation, we nevertheless thought it practically good, and a very safe guide. Sir John Sebright's knowledge of animals is fully proved by his writings, which, if not large in bulk, are comprehensive and pithy in matter. It is not to be supposed that Floyd would publish his notions on dog breaking, whatever reputation he may have for it, without his master's revision and approbation; and we feel confident, if it had his sanction, it could not have been very faulty. We need not inform the reading as well as practical sportsman, there are other directions on the subject also worthy of attention. One purporting to be by W. Dobson, Esq. of Eden Hall, Cumberland, and another, known as the *Suffolk Sportsman*, by the Rev. B. Symonds of Kelsale, Suffolk; from both of which amusement as well as instruction may be reaped. Nor are these all that offer instructive notices on the subject. Colonel Hawker is an authority of much respectability, and his work on *Shooting* is certainly the first of its class; but dog breeding and dog breaking, although it occupies less of his attention than almost any other subject he treats of, he nevertheless glances at. Talk to him of punts, stanchion guns, and poodle dogs, and he opens a mine many fathoms deep; but he does not condescend to enlighten us so much on *field sporting* generally as we could wish, although we have heard him praised as a dead shot at partridges. That indefatigable sporting scribe, Mr. T. B. Johnson, gives also, in his *Shooter's Annual Present*, a very useful if not an original account of sporting dogs and dog breaking. Of our own experience we will say little; but our known attachment to dogs and to sporting pursuits will, as we hope, give the opinions that we do offer on the subject of training and breaking some little weight, and allow us to challenge a candid examination of them. We are inclined to think, that in the process of dog breaking we rather retrograde than advance; and we form such opinion by comparing the training instructions of our times with those handed to us by writers of two or three centuries back. Those given in our day are seldom sufficiently full and methodical; neither, as we suspect, are our dogs so docile, so well trained, or so efficient, as those we read of in former times appear to have been. We would appeal to the early writers, and particularly to Markham, as one of the very best among them, whether we are right. Our reputed breakers are most of them too sparing of their trouble, and too anxious to get the job over, that another may be begun upon. Hence it is, that one dog broken in by the master, if he be really well informed on the subject, may have more game killed to him than to two of the half broken of modern hired trainers. Be it observed, we do not say there are no exceptions among breakers to our statement: we know there are, but it will require a pretty extended acquaintance to find them. What is to be done? If you buy when the season approaches, you have little choice—the best are taken off: nor are you probably allowed sufficient time to try them fully, and by yourself; and, without this, your chances are indifferent. Granted that you do meet with a handy dog, even then it is probable that he has been broken to methods different from your own. He does not acknowledge the same dog language as you use, and both dog and master must refrain before game is killed. But if you are absolutely reduced to the necessity of buying a dog or dogs, insist on a full trial of him or them—first, with the owner, be he keeper or otherwise; then, let the dog or dogs be left with you for two or three days at least, during which time watch them well, and attentively examine their methods of hunting, and whether they suit with your own views; for we need not state that very good sportsmen require very different qualifications in their dogs. One would have his pointer crouch like a setter, and another we knew, that the moment he dropped his bird by a shot expected him (the pointer) to come into his heels, while his retriever was dispatched for the bird; and, strange to say, the pointer was no less staunch; but he was trained to heel.

2563. *The breaking of the setter presents*, among the true setter fanciers, some slight shades of variation from that of the pointer. The *Suffolk Sportsman*, a true setter fancier, among much other instructive and interesting matter on *dog breaking*, after noticing ranging of setters on the chain for a determinate time, writes, "Now, lead him out, and keep him close to your foot; if he attempts eagerly to get on beyond the rate of your own walk, pulling so as to fatigue the arm, give him three or four snatches with all your force, but speak to him at the same time in sounds of friendship,—Rover, come back! Come in then! Come, good lad! Now stop, and reward him; then walk on and do as before. Such treatment will soon break him of these strivings, and be a good foundation for forwarder lessons. When the chain has brought him to a proper habit in walking near your side, the next day let him loose with his collar on; and after having emptied himself, and gambolled a ring or two, call him in gently and mildly; take him into some highway, the more sandy the

better, as not retaining any scents. If he shows a desire of inquiry at gate, stile, &c. by no means suffer it, but call immediately to order; and, upon compliance, give him his reward. A tin canister is the properest vehicle, which should be stored with pudding or liver boiled hard, and cut into bricks. Neither of these will give offence to the pocket or hand, as cheese will. Bread has not moisture enough, if well baked; and if it is slack and doughy, it sticks to the fingers in delivery. Never toss it to him, but give it into his lips, and make him take it as tenderly as may be. Though we may walk out with a brace together in this manner, it is by no means allowable to hunt them so. As the setter runs *solus*, he should never be put in company, under the notion of getting courage from his fellow; for the English spaniel has fire enough without a prompter, and always ranges freely from the very first. In an inclosed country, where the boundaries do not include more than six or eight acres, an active strong young fellow may by hard labour keep a dog to his work; but in the *fieldings*, the very attempt would stamp him to me an ignoramus. In the champaign, where the setter has room to display himself, a footman must contract his beat, or cannot be near enough to see and be certain in distinguishing between a real fault and a misfortune. Upon this rock many a poor John has split, and numbers of dogs been ruined. To cramp a high ranger in his career is cutting off his finest blossom, and leaving him only the bare name, without the power of action to support and dignify it. As it is the indispensable duty of every breaker to attend closely and calmly to every motion of his pupil, a horse is evidently necessary, to fit him for the task, which also must be qualified for his work, — *free*, and yet steady; fly at the touch of the heel, and stop at the word of command or drop of the rein; and, when quitted, never to go far from the place. This is not an ideal nag: I have such an one at this time; and they are in the studs of every sportsman of consequence or taste, I dare say. These are the most material requisites, because we should always be at hand at the commission of a fault, that we may challenge the dog with it that very instant to his face. Thus provided with a horse, and having reconciled the young dog to obey the terms of reclaim without fear, take him into the field, choosing an afternoon rather than a morning, that he may not be diverted from his proper game by catching upon hares or rabbits that have made late work. Let it be more especially remarked, that he should be hunted with a muzzle, until the danger of sheep chasing is over. It may be made large enough for free respiration, and yet not give liberty of break, so as to get blood, should be by chance run one down before he could be beaten off. Little regard is to be paid to his behaviour, as to forming any judgment, for three or four times going out, though some will cry up a dog at first sight as a most amazing galloper, not discerning between hunting and running. Again; a dog must be expected to *find* before he can be said to *hunt*; and until he shows a preference to a particular feather, and sticks to it, it is absurd to check him. I would always reward and encourage a young dog for chasing his proper game; which is indeed the only method to fix him from the trifling amusement of larks and small birds. It is not to be supposed that no kind of language has as yet been made use of, but free indulgence given to those freaks. As soon as his attachment is confirmed to the proper object, it is time to begin to enforce it. Here lad! Ware chase! and if voice is not sufficient, add a smack or two of the whip, which will do the business. Upon his return drop or secrete the whip, and call in mildly, Here lad! Come in then! Ware chase! Good boy! and a bit of pudding. Never suffer him to get back to the haunt, but quit the spot immediately, to beat on fresh ground. A few rebukes in this way, with civility after, will settle this point." (P. 71—79.) We do not remember any notice of the *Suffolk Sportsman* with regard to the killed bird being directly brought to hand, either by the setter or pointer; by which we may suppose he did not think it a necessary qualification. We know that it is not every sportsman who approves of the fallen bird being immediately fetched for these reasons: when a dog knows he is to fetch the bird as soon as it falls, he is apt at once to break away after it. If he be *solus*, it may be very well; and if the master's training has been so strict that only one dog will offer to move from the two or three dogs present, then also it is well; but even then it ought not to be allowed until the gun is recharged: one dog, or the dog, may then be "hied away" to "seek bird." We state "the one dog," as it is certainly not necessary that more than one should be broken to this art; for, if there be more that do it, the thirst for competition will occasion more than one to hie off, and probably each will return with half of the bird, or the disappointed dog will "seek out" for what he may find, and do mischief this way. We, however, have received so much pleasure in sending the well broken dog on this errand, that we would rather risk all the chances of mishap, and there certainly are some, than deprive ourselves of this satisfaction.

2564. *The pointer is usually less difficult to break than the setter*; he also is commonly expected to *stand*, to indicate the presence of the birds he winds or scents. The setter's instinctive disposition is to crouch rather than stand; but it is not always that he crouches, for some setters stand steadily to the point. The pointer is unquestionably the most popular dog at the present time; and, for the usual purposes of English gunners, generally is the best adapted. Altogether he is more easily steadied than the setter; he suffers less from heat, his coat being shorter and thinner; and, when once well broken in, he seldom

loses his training, which we cannot say of the setter. No dogs can bear thirst without great prostration of strength, but the setter suffers even more than the pointer, his fine waving coat encouraging more insensible perspiration to fly off than the short smooth coat of the pointer. But, on the other hand, the pointer's feet are certainly not so hard and firm as those of the setter, for he has not the spaniel toe tufts that protect each ball pad; and the hard wiry ling branches certainly gall the feet of the high-bred pointer so much, that in most cases one hard day on the moors unfits him for hunting the next. As regards the superiority of scenting powers between these dogs for grouse shooting, we will defer what we have to say on it until we treat on the practice of grouseing. With the contrasted qualities of these two varieties, it becomes almost a natural inquiry whether, by a union of the two, we might not get a most valuable cross? It has been tried, and sufficiently often, to enable us to state that it has now and then succeeded in producing an excellent variety, having the valuable properties of both: but such instances are too few to bring this breeding into general favour; nor from our own experience can we recommend it. The few that we have seen were hot-headed; and, if moderately steady one day, would, the next, do every thing but what ought to be done. A rather ludicrous instance of this fell under our notice:—A gentleman farmer, who possessed an excellent manor farm, which he cultivated himself, purchased a young dog of this mixed breed from a very reputed breeder and breaker, after having seen his performances, which it really appeared were very creditable to both dog and breaker. The dog was taken home, carefully housed and nurtured; but the harvest being not completed, even the new dog and the love of shooting could not take him (the farmer) from his reapers; consequently the young dog, well fed, caressed, and under no restraint, forgot, in a great measure, the keeper's tuition. His master, however, had not forgot the splendid trials of him he had witnessed previous to his purchase of him; and fondly, but foolishly, expected that the animal would naturally act as before. Elated by this supposition, and not a little proud of his dog, he wagered a rump and dozen with some older shots than himself, that he would bring into the field a *mixed-bred dog* that should find, stand, and hack, in a style superior to that of any unmixed dog or dogs that could be brought against him. The bet was accepted, and we were included in the invitation to see the trial, and were also requested to act as one of the umpires, and a more miserable display no noted dog ever made than did the farmer's fancied trump. It was not that he could not do much of what had been said of him; on the contrary, he gave many proofs that he could, if he would, do much towards trimming the rump and dozen of his master's opponents; but obstinacy and wantonness had taken such hold on him, that the first hour decided the bet, and the dog was withdrawn from the field with a threat from the worthy farmer, that he would immediately return the dog, and enter an action against the seller. This resolution, however, was abandoned on our suggestion, which met with the concurrence of the rest of the company, that without doubt the breaker would rebreak him to his former state of discipline, then hunt him before others whom he would subpoena on the trial, and would thus leave our worthy host minus his cause, exposed to the jeers of his enemies, and to little pity from his more discerning brother sportsmen. We afterwards learned, that a few days' hard work would still elicit some good behaviour, indeed some excellent hits; but eight or ten days' rest would, at any time, make him a perfect renegade. This kind of dog is seldom effectually cured: as long as he has hunt in him, he proves wilful; and, when old, he becomes either stupid or stubborn, or at least such has been our experience of the kind now described.

2565. *Why are good dogs for sporting purposes so difficult to procure?* is a question more often asked than satisfactorily answered. Within the last twenty years dog dealing has become quite a trade in London; and, judging by the advertisements in the sporting papers, nothing but animals of the most wonderful qualities are kept, and which are generally warranted to perform whatever they try—perhaps too partial—owners profess they can do. Indeed, we know men in the country calling themselves gentlemen who do not disdain to dabble in this sort of traffic, and who have periodical sales at Tattersall's of whatever they can scrape together,—which they try to palm off under colour of a name that often carries very little weight at home. Between them and the professional dealer, we should prefer the professional, inasmuch as his dogs being very likely stolen, may perhaps be good ones, while the gentleman dealer is sure to have nothing but the scum and scourings of the country. All owners and renters of manors have their own breeds, which they exchange with each other as occasion requires; and if a good dog is to be parted with there are always plenty of customers for him. Dog stealing used formerly to be a very lucrative calling in London, large sums being often received for the restoration of favourite dogs, particularly for the pets belonging to ladies. So crying did the evil become, that an Act of Parliament was passed about ten years ago, through the instrumentality of the present Lord Palmerston, whereby dog stealing was made larceny, punishable by summary jurisdiction before a magistrate, which has had a most beneficial effect in repressing the offence.

2566. *To become successful in breaking pointers, it is essentially necessary that you begin your operations on an excellent strain.* It is equally requisite that you should not only be

well acquainted with all the necessary manipulations, but also with the words of encouragement and reproof, which should not be changed by yourself or servant. The following are very common phrases among sportsmen : — When taking the field, *Steady!* This word of caution we always used on entering a field with young dogs with effect, and we did so at the commencement of the season with the elder ones likewise. *Take heed!* is used with the same purport. When your best nosed pointer is seen very busy with his nose and his tail, feathering as he hunts, then the word *To-ho!* in a mild tone but sufficiently marked for the dog's hearing and heeding, is a useful cheer as well as caution. *Down!* or *Down charge!* is an order to the dogs to crouch or drop to the birds. *Back!* returns the dog to your heels. *Seek out!* sends him off again in quest of game; but a *waive of the hand* is much better where it is expected birds are near. *Hie on!* gives a spur to the timid dog to leave your heels, as *seek out* orders him actually to hunt. *Go seek!* should be impressed on the dog's memory as an order to look for something supposed to be actually lost, as a bird you think is wounded, but are uncertain : it therefore differs from *seek out*, and the intelligence of the dog will soon teach him to distinguish between it and *seek out*. *Hold up!* is used to prevent the dropping of the nose to the ground to puzzle out the scent, which, although the odorous particles may not have left the spot the birds stood on, are principally floating in the air; consequently, by holding up his head down wind, he comes in contact with the scent of the birds almost immediately. The puzzle peg is used as a *dernier* resource when *hold up* is not attended to. *Ware!* is also a very important word when its adjunct is with it, as *Ware hare!* as when a pointer inclines to rush on a hare, when partridges, grouse, or pheasants, only are sought for. A very first rate breaker we knew, on entering a field, or wood, or moor, would say, *Ware feather!* when his dogs would pass every bird; and *Ware fur!* would secure every fox, hare, or rabbit, from molestation, as *Ware horse!* would send them from under the legs, or coming in the way, of the *shooting pony*. It is, however, well to bear in mind, that it is prudent to use signs to your dogs as well as sounds: a waive of the hand will frequently save an exclamation that would spring the birds.

2567. *The majority of the young pointer* may be dated from the time he “lifts his leg;” and at this period he may commence his fielding: but as early as five or six months he should be allowed to walk out with his master or the keeper. If it be on the road or anywhere where game is not likely to start before him, here let him ramble alone or in company, but never lose sight of either him or his fellows. Practise one and all in coming in to heel the moment you call, and never excuse one. The word “back,” coupled with the dog's name, as *Back, Dash!* should be sufficient, and will prove so, if proper methods have been pursued towards the pupil; for we are complete sceptics on the probability of an entirely intractable nature in any dog. Inquire of Van Amburgh whether he is not of the same opinion? These walking lessons should be to the breaker premonitory ones; some dogs are six weeks, or even two months, in advance of others in their scenting and, consequently, hunting propensities; their accompanier, therefore, must narrowly watch their actions, and note such as are fit to commence fielding. The *Suffolk Sportsman* very justly observes,—“There are two seasons in which pointers may be put under tuition, but only one whereat they can be perfected and made fit for business. The age ought to be near eighteen months; and the puppies that were brought forth from the middle of March to the middle of May will be fit for trial by the middle of August. They who will rear up whelps at any time, with indifference, may find it necessary to take them in hand in pairing season; but then, they should consider the nature of the work they undertake. There is as wide difference between the language of April and September, as settling the saddle on a colt's back, and riding him a match. It is very common, and sometimes absolutely necessary, on account of age, to be doing with a dog in the spring; but it can reach no farther than barely initiating. We must work now in the negative only, except in one article. We can tell him he is not to go off without the word or signal given — drive through one field into another — chase larks or crows — run at a sheep, and so on, as is usual with most young folks of spirit. He may be taught to quarter his ground, and know his game; and that is the utmost I would aspire to.” (P. 67.) These initiatory lessons require to be accompanied with verbal notices; but short and expressive words only should be made use of, and these should never be changed either by the master or attendants. What says the Rev. B. Symonds, of Kelsale? — “I could, when I had dogs of every denomination, call out any one by name from all the rest, either on my horse's back, or on foot; and not another dog should so much as look through the gate.” “When you first shoot to a bird,” says Floyd, “a long line should be used, the end of which should be held by an assistant at the time the dog points, in order to check him if he attempts to run up to the falling bird, which he will probably not do if he has been managed according to the directions I have given. It is much better not to allow a young dog to run up to the bird when it falls, although you may wish him so to do when he is perfectly made. All dogs that run up to the bird when it falls will invariably chase more or less, and in so doing put up game. On the other hand, many birds will be lost if not immediately pursued.” (*Observations on Dog Breaking*, p. 19.) We presume that breaking is purposely intended to prevent these pro-

pensities taking too deep root, and are not intended to prevent the dog from being broken to fetch his game; for it cannot be denied that this is certainly very luxurious shooting, and where the sportsman is fortunate enough to be either able himself to break his dog to it, or should he have such a keeper as Floyd, we can see no reason why it may not be done. There is, unquestionably, much pleasure in seeing the well broken dog "hieing away," fetching, and putting the bird into our hand. Many however contend, that all that is required is to break the pointer to drop to the gun when a bird falls; and there appears some reason for this preference, for should the bird be only winged it will run before the pointer, and if the covey is large many of them probably will be sprung in the chase; it remains therefore with the sportsman, to take his choice between the excellences and the grievances. As regards training the pointer to game, it has occasioned disputation, whether too great plenty, or a scarcity of game, is to be preferred for his practisings. It will, in our opinion, depend on the extent to which the dog's breaking has already been carried, for there are but few that have not received some; and also whether it has been good or indifferent. If his early lessons have been conducted judiciously, and the dog comes of a good breed, and has had good initiatory lessons, no quantity of birds will either bewilder him, or make him careless or wild. If otherwise, we know of nothing more unlikely to unsettle the wilful dog than a profusion of birds.

2568. *We have hitherto said little on the subject of purchasing pointers.* If you are forced to this alternative, be very cautious; first, learn as much as you can with regard to the breed, and have indubitable proofs that the account rendered is correct. First, let powder be burnt over the dog; for it has not unfrequently happened, when one has been purchased without a trial, that the first shot has sent the frightened animal no one knows where, perhaps to his original home, where he had been foolishly shot at to cow him; and, consequently, he will never now be worth the powder that ruined him. Mark the signals which the master of the dog you are trying makes, and carefully note the words of command, reproof, &c. he uses. Dog language unfortunately varies in different localities, and almost every breaker has his own calls, which it behoves the buyer of a new dog to store up in his memory. It is, we again assert, actually impossible that you can be too cautious when purchasing a dog; nor that you can have too much trial of him. We shall, in all probability, reiterate these cautions as we proceed—they are so important; for the dog traffic is to the full as nefarious as horse dealing.

SUBJECT. 6. *The Gamekeeper.*

2569. *Mr. Daniel very justly observes,* that it is not every fellow with a short jacket and half-a-dozen pockets that is fitted for a gamekeeper, in which we cordially agree. The well



THE GAMEKEEPER.

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appointed gamekeeper (*fig. 400.*) ought to have as much or even more varied information under his hat than even the huntsman to a pack of hounds, who is however a very important personage. If a gamekeeper be really honest and efficient, he is the *rara avis in terris*! a very black swan! so difficult a matter is it to enter on an office that almost by patent is supposed to imply a right to get all that can be got, and also to get it any how. Nevertheless, we believe there are some conscientious gamekeepers, and they ought to be highly prized and well rewarded. We perfectly agree with Mr. Daniel, that "a sportsman does not require a man to be termed a game-

keeper who is the best shot in the district: it is not for the purposes of slaughter, but protection, that he employs him; and to afford that protection, he should be well versed in the nature of every sort of vermin, with their haunts and their mode of preying upon the game, and not only know, but be indefatigable in catching, the most subtle and wary of them. He should (like one who publicly advertised for a gamekeeper's place some years since) be able to kill all vermin, "from a mouse to an otter, and from an eagle to a sparrow." If with this art he can shoot well enough to kill a dog or a hawk, his master will have a greater prospect of a stock of game, than if he could hit eleven

farthings out of twelve, thrown at several times into the air. These desperate marksmen are very apt to keep their hands in by killing game unknown to their employers; and what perhaps is first sent as a present to a friend, soon becomes an object of merchandise, and readily finds its way to market through the medium of the coachmen and guards to mail and other coaches (the bigglers generally deal with poachers themselves)." (P. 131.) The same gentleman also tells us "one mode of supplying the poulterers and fishmongers is by gentlemen who send hares, pheasants, and partridges to them, and receive an equivalent in poultry and fish during their residence in town. Allowing these sportsmen do not truck their commodities for money, they are, in the proper sense of the word, nothing less than bigglers, dealers, and chapmen; for although an exchange is affirmed to be no robbery, yet it was never denied to be a sale, and the act of selling game is illegal in any person whatever. Besides, gentlemen must allow these poulterers and fishmongers to bear their names as a qualification, in case of being informed against for having game in their possession, and which is a cover for all that comes into their hands from the poacher." (P. 132.) Legalising the sale of game has, however, made a mighty change in this matter. We have understood, that in one of the Norwich coaches, some years ago, when it arrived at Lad-lane, the following game was told out: — hares 154, pheasants 163, partridges 189, woodcocks 34, snipes 149, wildfowl 72; but this quantity, we believe, has been occasionally much exceeded. Neither did this include the private and poached passengers of both feather and fluck, under the *private care* of the guard and coachman. We also regret to add, that some gentlemen hire persons to shoot for them by the year, the consequence of which is, that not only the game on the manor to which the game is deputed, but all the contiguous manors likewise suffer.

2570. *The gamekeeper's situation, in most cases, is an enviable one*; particularly if, with the confidence of his master, he have sufficient assistance under him. He is, in virtue of his office, looked up to, has much weight in his own neighbourhood, and in many instances his situation is a lucrative one, particularly if he be allowed to break dogs; and, it is the more so, if he also can deal in them, as is not uncommon: neither of which would we, however, allow; he cannot serve so many masters, nor carry on so many trades, fairly to all concerned. We therefore would caution all gentlemen against permitting the keeper to do either one or the other — that is, to break dogs or to traffic in them in any way. The master's interest must be neglected, and the dogs his keeper breaks or rears must, in all probability, be fed at his (the master's) expense. Neither should any gentleman retain a keeper in his employ who is a frequent visitor to the country ale-house. While he is there, the safety of the game is neglected, and frequently his visit is premeditated and paid for — as some are better paid for not seeing than those that do see. If we did not know that some persons are apt to hire a poacher to do the office of keeper for them, we should be doubtful of the possibility of the thing: it has, however, been frequently done; but we believe we could with safety assert, that this method never did, nor is it ever likely to, answer the sportsman's purpose. "Setting a thief to catch a thief" is an old saying, and some might apply it to our present subject, and there is much parity of cause and effect in the case. The poacher will still enact his part; and if he can make it worth the keeper's acceptance, the keeper will let him poach on in such parts of the manor as are little frequented. We once knew an instance where such a proceeding was detected, when the gamekeeper in his defence alleged, he did it purposely to save his master's game near the homestead, by his attention not being divided between the outposts and the home preserves. By the next year it was hard to tell which was most cleared, the home, park, and woods, or the poacher's ground; however, the poacher was made to fly the country, and the keeper was turned adrift without a character.

2571. *The gamekeeper who would act up to his duties* should be a general observer of Nature, particularly of her living objects, with which he should have an universal and also an intimate acquaintance. The seasons likewise, under all their variations and consequences, he should mark well; thus he would be aware that a mild spring, by encouraging all game birds to pair earlier than when the season is late, cold, and wet, would lead him to act accordingly. Partridges hatched in a mild season will be seen very forward, indeed, as early as June; and pheasants likewise, under the same circumstances, often appear towards the middle of the same month. Under such premonitions he should spare the female hares after Christmas, for they will probably be forward in young in February, and consequently neither fit for food nor creditable to kill. We would hope that no sportsman would entrust his game establishment to a keeper that could not read; and yet we have heard of a gentleman being pursued by a keeper who, when he came up, was inclined to be troublesome, very authoritatively insisting on the gentleman's name being given, and that his certificate should be shown, which, being complied with, the keeper acknowledged he could not read, but very coolly desired the gentleman to read it for him, but which was not complied with; on the contrary, the holder of the certificate returned it to his pocket unread, and left the impertinent to his own redress. This was bad enough; but if he was either the principal, or the only keeper, his master could not have had very enlarged notions of the duties of such a servant, who, if

not equally erudite with his land steward, should at least be sufficiently educated to be able to read and write, and also be well versed in every bearing of the game laws. Not only should he have these acquirements, but it is requisite that he have gained knowledge enough to avoid leaving a bad impression on the minds of strangers relative to his master from the ignorance and ill-behaviour of his servant. A gentleman we ourselves knew was so rudely accosted by a keeper, that he would make him no answer; the *brute*, relying on brute force, took the trespasser, as he was pleased to consider him, by the collar, and was in return immediately knocked down. The keeper, on rising, attacked our friend with great violence; but he, being excellently versed in all the arts of *defence*, although one of the most *inoffensive* of men possible, gave the keeper a most sound drubbing, and hardly received a scratch in return. In olden times the gamekeeper to a respectable domain was usually a man of much respectability and much general information: his manners also were commonly such, that he could make his company agreeable to the visitors of his master in their sportings, yet he was possessed of sufficient firmness to awe delinquents who intruded themselves without authority. Every keeper, likewise, should be above accepting a bribe, and ought to be discharged as soon as it is found that he has received one, although it must be allowed that the briber must be at least as criminal as the unfaithful keeper. We do not here allude to the usual *douceur*, which is often well earned, and very properly bestowed on the keeper who accompanies you around the manor.

2572. *The honesty of the gamekeeper* is of great importance to the credit of his master, and to his interest also, if he should wish to keep the manor well stocked with game. We ourselves would never allow a keeper to shoot with any other than a single gun, and were it not for the awe it may excite in the occasional trespasser, and likewise on the regular poacher, as well as the necessity of his shooting the birds and beasts of prey which devour the game; were it not for these considerations, we repeat, our keeper should not be even allowed to carry a gun. We never permitted our own to carry one; but, as regarded ourselves, the woods we considered most in the light of preserves were within hearing of the dwelling-house, and although the manor extended several miles, the circumjacent being bordered by decoys, which were strictly watched by the decoy renters (we ourselves could not shoot but within certain distances of them), there was therefore little necessity for arming him. The keeper to a manor should be on the best terms with the farmers around; but, at the same time, he should observe well the number and kind of dogs kept by each. If it be a hare farm, and consequently a coursing locality, let him set his face against a lurcher being kept, and let him have a sharp eye on the gun or guns that are paraded over the mantel-piece; and if they are seen to be every now and then disturbed, let it arouse his suspicions. Crows and magpies do not require shooting all the year round, and the gun is not charged anew each night to guard the dwelling. Is there a pheasant preserve on the manor, he must be extremely vigilant at the time they are pairing, to guard against their eggs being stolen and sent to Ireland, or into the counties where pheasantries for breeding are common, as in Buckinghamshire, Hertfordshire, &c. &c. He must also encourage the pheasants to breed near his lodge; and, to this end, he should keep them around him, by a morning and afternoon call by bell to be fed. Stacks of peas or of buckwheat should likewise be placed at convenient parts of the manor, where they can feed without temptation to stray. The prudent gamekeeper, while he is vigilant, will however never seem to be too hard on the sportings of the tenantry, so long as they are kept within proper bounds. By such indulgence every farmer will himself become a zealous and faithful keeper over the manor; and the rightful keeper, without any infringement on his own duty, will extend the interest and reputation of his master. Nor will it be at all out of place that he should now and then request of his master a day's shooting, or a day's coursing, for the tenants and their friends. It is fit that they whose land furnishes the means should also receive part of the produce; deprive them of that, and likewise of the favourable notice it betokens, and it deadens their efforts to assist in preserving the game on the land. Is a pack of foxhounds kept near your master's preserves, good keeper? Yes. Then, indeed, you have a difficult game to play; for two interests are here opposed, and sometimes three, supposing that you have the rabbits as part of your wages, a very undesirable arrangement for a master to make who has the interest of fox-hounds at heart. Let the keeper, however, remember what sport a fox affords to every class of society, and what credit attaches to the one who, in addition to good wild foxes, can show a good supply of pheasants. Above all, don't live with a double-faced master, who tells you to do one thing (preserve) in public, and another (perhaps poison) in private. When we lived at Tollesbury Manor House in Essex, where numbers of foxes surrounded us, and where consequently a leveret or two, and a few of our rabbits, were occasionally taken from the adjoining woods, and where our hen-roost might now and then suffer, yet the loss was very trifling; nor did the rabbits sensibly decrease. We therefore, in justice, could not owe this sporting trump a mortal grudge; on the contrary, when we have occasionally popped on him in the woods which surrounded our house, the rogue looked so sleek and so sly that we could not find it in our heart to break through the rules of hospitality so much as to fire at him. We defy a man fond of fox hunting to be a willing vulpecide, even on his own or on his rented manor, as was the one we now

notice. But where fox hunting is not pursued, and other game is cherished, we cannot wonder at the hostility of others towards him, particularly if they are not fox hunters. If no foxhound pack be in the vicinity, or seldom approaches it, although hares and rabbits may abound, and winged game may be in tolerable plenty, foxes will multiply, and under such circumstances the owner of the estate will be irritated, and we then must not be surprised should the keeper set a trap for his capture and send him elsewhere. When a fox-trap is set, we hardly need to inform the keeper that his hands must be so covered, that no human scent shall remain on either the trap or the bait.

2573. *The winged game destroyers* must be equally watched by the keeper. The dark buzzard, and that variety familiarly known as the puttock, the kite or glead also, being one and all very destructive to every kind of game, must be narrowly guarded against; for they live almost entirely on it. Ravens and crows must likewise be looked after, and either shot or taken in springes; snakes also are destructive to game and to the eggs of game; and although we have offered an instance, of our own witnessing, of the capability of the hedgehog to seize on the leveret, which may be kept in mind, yet we do not think it a common occurrence. Magpies, rooks, crows, &c. may be taken by means of stiff paper pieces made into funnel shapes. Apply some birdlime within the sides, and at the bottom of all; having also stuck a piece of flesh within each, plant these funnels into the ground sufficiently firm to support themselves against the wind: so doing, the birds in their attempt to secure the meat, fasten the paper funnel so tightly to the head, that they may be taken by hand. We hardly need to remind the keeper that he should bush the stubbles thoroughly, and the grass fields likewise, for netting is carried on by poachers over them as well as over the stubbles. Dog brambles laid lightly on the stubbles, or on the grass, by rolling with the net prevent its action, and fearfully annoy the poacher. If a partridge's nest is found before mowing, mark it by a stick, bush, or other object, that shall warn the reaper, or the watchful mother may be cut into pieces by the scythe. It would also greatly tend to the preservation of game, that the farm tenants should not *mow* their grain: neither should they remove the stubble as soon as the harvest is completed. It ought not to be done until from six weeks to two months (according to the nature of the season) has passed over. Were we to enter fully into all the duties of the gamekeeper, so multifarious are they, our niche for the subject would spread over the space allotted to that of several others. If life and strength however be left us, we will yet fill up the blank, for the subject is both an interesting and an important one.

CHAF. IV.

GROUSE SHOOTING.

2574. *Grouse shooting to the gunner* is what the chase of the fox is to the zealous hunter of beasts. It is certainly attended with less danger, but it is infinitely more fatiguing, which again is fully compensated to the lover of nature by the endless variety it presents, and to the sportsman by furnishing him with the objects he is in pursuit of. The month of August is therefore looked forward to by the fowler with extreme anxiety, and grand preparations are made by him for his visit to the moors, or muirs as they are called by the northerns. But ere we proceed further on our journey there, we must inquire into the natural history of the varieties of this interesting family we hope to meet with when we do arrive there. It appears somewhat inconsistent that we should take such pains, and go so far, purposely to destroy that which we so much admire: but when we are enjoined, as a divine command, to "Take, kill, and eat," we hope we do it without offence; for we are told that it is not the use, but the abuse, of our pursuits after animals that is to be reprobated: for to a certain extent it is not only lawful, but is also demanded of us to keep down a super-abundance of the living objects around us.

SECT. I. *The Members of the Grouse Family.*

2575. "*By the word grouse*," says Sir William Jardine, "we, in general language, are most apt to associate our ideas with the common muirfowl. But in the technical terms of ornithology, the generic name, *Grouse* and *Tetrao*, is restricted to those bearing the form of the European wood grouse, dusky grouse of America, &c. They are the largest birds of the family, of a very round and powerful form, and frequent heathy forests in preference to the wild and open muir, perch and often roost on trees, where young shoots and tender bark also supply them with food; and although the legs are plumed with short feathers, the toes are naked. The tail is composed of broad feathers, and is proportionably long and rounded. They are mostly polygamous, and the females and young differ considerably from the males, the plumage of the former being shades of brown and tawny, with black bars and markings, the colours of the latter distributed in broad masses of black, glossy green, or steel-blue, and deep brown. They inhabit North America and Europe, those of the latter country extending into Northern Asia." (*Naturalist's Library*, vol. iv. p. 108.)

SUBJECT. 1. *The Wood Grouse, or Capercallie.*

2576. *The wood grouse, or capercallie* (*Tetrao Urogallus* Linn.) is known also as the *cock-of-the-wood*, and *giant grouse*, from his great size and gallant bearing. As he is seen in fig. 401. he might indeed be taken for a bird of prey, rather than a fowl; and his very



THE CAPERCALLIE.

beak, it will be seen, indicates predacity. Sir William Jardine says of this admired bird, that "He was the noblest of the British feathered game, but that the attributes of strength, size, and beauty, have proved his destruction; and, consequently, they have been for many years extinct. In ancient times they were tolerably abundant in the primeval forests of Scotland and Ireland. From the latter they appear to have been entirely extirpated at a very early period, while in Scotland the destruction was more gradual; but they gradually dwindled away there, also, by murderous hands; and the last specimen is recorded, from fifty to sixty years since, to have been killed in the neighbourhood of Inverness. There is, however, a prospect (as will appear hereafter) of the species being again introduced to the Scottish forests; and, at all

events, the following interesting account of the attempts which have been made at Mar Lodge, and the habits of the female and young, will be read with interest." The accounts here noticed, as we learn from this eminent writer, were extracted from Jameson's *Journal* for July, 1832, and are too descriptive and too important to the reader generally, and to the sportsman particularly, to be omitted; and the more so, for the gleam of hope they afford, that in our day we may once more see this noble bird indigenous to our island. "I was wading," says the narrator, "down the Dee one fine afternoon, a little below Mar Lodge, and with a lighter pannier than usual, when I heard the cry of a bird to which I was unaccustomed, and my bad success in that day's angling induced me the more readily to diverge from the 'pure element of waters,' to ascertain what this might be. I made my way through the overhanging wood for a few hundred yards, and soon after reaching the road, which runs parallel with the river on its right side, I observed a wooden palisade, or inclosure, on the sloping bank above me. On reaching it, I found it so closely boarded up, that I had for a time some difficulty in descrying any inmates; but my eye soon fell upon a magnificent bird, which at first, from its bold and almost fierce expression of countenance, I took rather for some great bird of prey than for a capercallie. A few seconds, however, satisfied me that it was, what I had never before seen, a fine living example of that noble bird. I now sought the company of Mr. Donald Mackenzie, Lord Fyfe's gamekeeper, the occupant of the adjoining cottage. He unlocked the door of the fortress, and introduced me to a more familiar acquaintance with its feathered inhabitants. These I found to consist of two fine capercallie cocks and one hen; and the latter, I was delighted to perceive, accompanied by a thriving family of young birds, active and beautiful. The first importation of these capercallies arrived from Sweden about the end of the year 1827, or early in January, 1828. It consisted of a cock and hen, but the hen unfortunately died after reaching Montrose Bay. As the male bird alone arrived at Braemar, the experiment was judiciously tried of putting a common barn-door fowl into his apartment during the spring and summer of 1828. The result was that she laid several eggs, which were placed under other hens, but from these only a single bird was hatched; and when it was first observed, it was found lying dead. It was, however, an evident *mule*, or hybrid, and showed such unequivocal marks of the capercallie character as could not be mistaken. The second importation likewise consisted of a cock and hen, and arrived safely in this country in January or February, 1829. The female began to lay in the ensuing April, and laying in general an egg every alternate day, she eventually deposited about a couple of dozen. She showed, however, so strong a disposition to break and eat them, that she required to be narrowly watched at the time of laying, for the purpose of having them removed, for otherwise she would have destroyed the whole. In fact, she did succeed in breaking most of them, but eight were obtained uninjured. These were set under a common hen, but only one bird was hatched, and it died soon after. In the spring of 1830, the hen capercallie laid eight eggs. Of these she broke only one; and, settling in a mo-

therly manner on the other seven, she sat steadily for five weeks. On examining the eggs, however, they were all found to be addled. In the early part of 1831, three apartments were ingeniously formed adjoining one another. The hen was placed in the central chamber, between these and the inclosure on either side, each of which contained a male; there was an easy communication, so contrived, however, that the female could have access to both the males, whilst they, from their greater size, could neither approach each other, nor disturb the female as long as she chose to remain in her own apartment. In May and June of that year she laid twelve eggs, seven of which were set under a common hen; of these, four were hatched in an apparently healthy state, one was addled, and the other two contained dead birds. Of those left with the capercallie hen, she broke one, and sat upon the other four; of which two were hatched, and the other two were found to contain dead birds. Of the two hatched, one soon died. Both the barn-door hen and the female capercallie sat twenty-nine days, from the time the laying was completed till the young were hatched; and Mr. Cumming called my attention to the fact, that there were birds in all the eggs of this year's laying except one. My visit to Braemar took place about the first week of last August. I think all the five young were then alive, and although only a few weeks old, they were by that time larger than the largest moor-game. I had no opportunity of handling them, or of examining them very minutely; and the general view which I had of them, at the distance of a few feet, did not enable me to distinguish the difference between the young males and females. They seemed precisely the same at that time both in size and plumage, although I doubt not the male markings must have shown themselves on the young cocks. The single surviving bird of those hatched by the mother died of an accident, after living in a very healthy state for several weeks. Two of those hatched by the common hen died of some disease, the nature of which is not known, after lingering for a considerable time. It follows, that there are only two young birds remaining. These are both females, and when I last heard of them, some months ago, were in a thriving condition. The whole progeny were fed at first, and for some time, with young ants; that is, with those whitish, grain-shaped bodies, which are the larvæ and crysalids in the cocoons of these industrious creatures, though commonly called ants' eggs. At that period they were also occasionally supplied with some tender grass, cut very short. As soon as they had acquired some strength, they began to eat oats and pot barley, together with grass and the various kinds of moss. They are now fed like the three old birds, chiefly on grain and heather tops, with the young shoots, and other tender portions of the Scottish fir. I am informed that the distinction between the sexes had become very obvious before the death of the young males. The plumage of the latter was much darker, their general dimensions were greater, their bills larger and more hooked. These characters became very apparent during November and December. The old males have never yet had access to the young birds, so that it has not been ascertained whether they entertain any natural regard for their offspring, or would manifest any enmity towards them. From the continued wildness of the old birds, especially the males, it was found difficult to weigh them, without incurring the risk of injuring their plumage. However, the male which arrived in 1829, and which then appeared to be a bird of the previous year, was lately weighed, and was found to be eleven pounds, nine ounces, avoirdupois. Judging from appearances, it is believed that the weight of the old hen would not much exceed one-half. There is, indeed, a striking disparity in the dimensions of the sexes in this species." It yet inhabits many of the forests of Europe, and it is there to be found at the present time in sufficient plenty. It is also known in many parts of northern Asia, but every where is in most abundance in the pine forests, the young shoots and cones of the pine, the catkins of the birch, and berries of the juniper, being its favourite food. Sir William Jardine says of these birds, "They are polygamous, and at the commencement of incubation the male places himself conspicuously, and attracts the female by his loud cries, resembling *pepper, pepper, pepper*, and by his various attitudes. On hearing the call of the cock, the hens, whose cry in some degree resembles the croak of the raven, or rather, perhaps, the sounds *gock, gock, gock*, assemble from all parts of the surrounding forest. The male bird now descends from the eminence on which he was perched to the ground, where he and his female friends join company. When the females really commence incubation, they are forsaken; the males skulking among the brushwood, and renewing their plumage, while she attends to the hatching and rearing of her progeny." (P. 115.) Bewick, who is usually very correct in his ornithological descriptions, states the capercallie to be "as large as a turkey, that it is about two feet, nine inches, in length, and weighs from twelve to fifteen pounds. The bill is very strong, convex, and of a horn colour; over each eye there is a naked skin, of a bright red colour; the eyes are hazel, the nostrils are small, and almost hid under a covering of short feathers, which extend under the throat, and are there much longer than the rest, and of a black colour; the head and neck are elegantly marked with small transverse lines of black and grey, as are also the back and wings, but more irregularly; the breast is black, richly glossed with green on the upper part, and mixed with a few white feathers on the belly and thighs; the sides are marked like the neck; the tail consists of eighteen feathers, which are black—those on the sides are marked with a few

white spots; the legs are very stout, and covered with brown feathers; the toes are furnished on each side with a strong pectinated membrane. The female is considerably less than the male, and differs greatly in her colours: the throat is red; the transverse bars on the head, neck, and back, are red and black; the breast is of a pale orange colour; belly barred with orange and black, the top of each feather is white; the back and wings are mottled with reddish brown and black, the scapulars tipped with white; the tail is of a deep rust colour, barred with black, and tipped with white." (P. 296.) We believe it was never known in Wales; but, in times long past, it was not uncommon in Ireland. Mr. Pennant notices one shot near Inverness as a very extraordinary occurrence; but whether it was the rarity of its southern position, or the time when it happened, is not noted. As, however, the circumstance occurred some fifty or sixty years ago, we suppose it was considered as the last of the race of that period. We nevertheless are allowed still to hope, that by the spirited exertions of the Earl of Fife, notwithstanding the disasters that have hitherto befallen them, that this second naturalisation will eventually be attended with success; and foul befall the murderous hand that shall then be lifted against them. Mr. Lloyd also, it is said, brought some of these rare birds from Sweden for the Marquis of Breadalbane, for his woods at Taymouth Castle; and common report says, they also are likely to thrive. We however fear such are the villanous propensities of the lower orders to mischief, that they will not be suffered to increase. The hen bird of the capercallie is very small when compared with the male; but it is worthy of remark, that there is not much variation, either in size or colour, between the sexes, until towards the winter which succeeds their hatching. Wild as the cock bird is in his native state, yet Lloyd in his *Northern Field Sports* (a work we have had former occasions of noting as offering a most interesting and faithful account of the sports of the field in those localities) assures us, that the capercallie is often domesticated in Sweden, and becomes so tame as to eat out of the hand. In their captivity they were fed, we are told, with oats, and with large branches of Scotch fir, which were introduced into their cages; water and coarse sand were likewise given them. We learn from another source, that of Mr. Nilsson, that in the province of Dalecarlia these birds are reared in confinement, and become as tame as a domestic fowl. In a state of nature, on the contrary, this bird is famed for his wildness, and disposition to be pugnacious; Nature, indeed, seems to have intended him to be so by his powerful make, and by the form of his bill, which, like that of the hawk, bears all the signs of pugnacity about it. Its great strength, however, was required to sever the heath tops, the strong berries, and the pine cones. This account of the domesticated capercallie only confirms us in our oft-repeated assertion, that when man was made *lord* over the living objects of creation, no inseparable bar was made by the Creator between us and them; but, on the contrary, that one and all may be familiarised.

2577. *The pairing of the capercallie* commences about the spring, the sexes having kept together during the winter in packs of fifty or a hundred. When the pairing has been completed, the female, making a rude nest, lays from eight to sixteen eggs in some spot where she can sit on and hatch them in security. The young, like the farm-yard fowls, are active as soon as they are hatched; and, it is said, they are frequently seen running about with part of the shell on them.

2578. *Of the shooting of the capercallie in Britain*, we have few notices; but of the methods of taking or shooting them in Sweden, both Mr. Nilsson and Mr. Grieff, gentlemen of that country very highly spoken of by Mr. Lloyd, give us the following account. We will claim a little indulgence for introducing, also, what Mr. Brehm states:—"I usually shot the capercallie in company with my Lapland dog, Brunette (a cocker), of which I have already made mention. She commonly flushed them from the ground, where, for the purpose of feeding upon berries, &c. they are much during the autumn months. In this case if they saw only the dog, their flight in general was short, and they soon perched in the trees. Here, as Brunette had the eye of an eagle, and the foot of an antelope, she was not long in following them. Sometimes, however, these birds were in the pines in the first instance; but as my dog was possessed of an extraordinary fine sense of smelling, she would often wind, or, in other words, scent them for a very long distance. When she found the capercallie, she would station herself under the tree where the bird or birds were sitting, and, by keeping up an incessant barking, direct my steps towards the spot. I now advanced with silence and caution; and, as it frequently happened that the attention of the bird was much taken up with observing the dog, I was enabled to approach until it was within the range of my rifle, or even of my common gun. In the forest the capercallie does not always present an easy mark; for dipping down from the pines nearly to the ground, as is frequently the case, they are often almost out of distance before one can properly take aim. No. 1. or 2. shot may answer very well, at short range, to kill the hens; but, for the cocks, the sportsman should be provided with much larger. Towards the commencement, and during the continuance, of the winter, the capercallies are generally in packs; these, which are usually composed wholly of cocks (the hens keeping apart), do not separate until the approach of spring. These packs, which are said to contain fifty or a hundred birds, usually hold to the sides of the numerous lakes and morasses, with which the

northern forests abound; and to stalk the same in the winter time with a good rifle, is no ignoble amusement. Among other expedients resorted to in the northern forests, for the destruction of the capercallie, is the following:—During the autumnal months, after flushing and dispersing the brood, people place themselves in ambush, and imitate the cry of the old or young birds, as circumstances may require. By thus attracting them to the spot, they are often enabled to shoot the whole brood in succession." The manner in which this is practised may be better understood from what Mr. Grieff says on the subject:—"The capercallie is shot in the night time by torch-light. This plan, which is said to be very destructive, is, I believe, confined to the southern provinces of Sweden; for, in the more northern parts of that country, I never heard of its being adopted. In Smaland and Ostrogothland this is said to be effected in the following manner:—Towards night-fall people watch the last flight of the capercallie before they go to roost. The direction they have taken into the forest is then carefully marked by means of a prostrate tree, or by one which is felled especially for the purpose. After dark, two men start in pursuit of the birds; one of them is provided with a gun, the other with a long pole, to either end of which a flambeau is attached. The man with the flambeau now goes in advance, the other remaining at the prostrate tree, to keep it and the two lights in an exact line with each other; by this curious contrivance they cannot well go astray in the forest. Thus they proceed, occasionally halting, and taking a fresh mark, until they come near to the spot where they may have reason to suppose the birds are roosting. They now carefully examine the trees, and when they discover the objects of their pursuit, which are said stupidly to remain gazing at the fire blazing beneath, they shoot them at their leisure. Should there be capercallies in the same tree, however, it is always necessary to shoot those in the lower branches in the first instance; for, unless one of these birds falls on its companions, it is said the rest will never move, and in consequence the whole of them may be readily killed." We have before had occasion to recommend Mr. Lloyd's work on the *Field Sports of Norway and Sweden*, as among the most interesting of the modern sporting works that have appeared; and the extracts we have now laid before the reader, although but a very small portion of the entertaining and instructive matter therein, will, we hope, not only bear us out in our assertion, but will excite him to possess himself of the whole; and, so doing, we pledge ourselves he will be amply repaid.

2579. *Renewed hopes of again naturalising the capercallie.* A notice in the *New Sporting Magazine* for August, 1837, states that "Thomas Fowell Buxton, Esq. not better known as an eminent brewer, than for his readiness in lending himself and ample fortune to any laudable purpose, empowered Mr. Lloyd, above mentioned (who, having taken up his abode in Sweden, was therefore a fit *employé*), to collect in that country a sufficient number of capercallie to replace those before brought over, to form a breeding stock of them. This undertaking, at great trouble and vast expense, was effected by the exertions of Mr. Lloyd, and twenty-nine birds were shipped in Sweden for England, only one of which died on the passage; and it must be allowed that this good fortune was highly creditable to the judicious care of Lawrence Banville, the person entrusted with them. With that laudable disposition to extend every branch of useful and interesting knowledge, which marks the general conduct of Mr. Buxton, he was pleased to present the whole to the Marquis of Breadalbane, who, being known as the owner of an Highland district of vast extent, and equally well known to have been formerly inhabited by these birds, was consequently well adapted to receive and nurture them again; and thus our hopes of their multiplication and preservation are renewed. Mr. Buxton showed also a sound judgment in placing them under the protection of a nobleman not more eminent for his vast estates, than for his anxiety and exertions made to introduce improvement in the country he inhabits. We should therefore hope, that gratitude alone will prevent vile marauders from an attack on these valuable foreigners. If it should be otherwise, may signal punishment overtake the hand that does it, for mischief alone can prompt the deed; and mischief only, we should think, can injure the stock; for the extensive forests of the noble marquis offer them excellent shelter, as the trees themselves furnish the food so congenial to their tastes." It happens, however, that since the above statement was made, the proprietors of this work have received from the son of Mr. Buxton a much more detailed account of the extent and success of the attempts to again naturalise the capercallies in Great Britain, with kind permission to make what use we please of the communication. The subject, it must be confessed, is of considerable interest both to the sportsman and naturalist; and as we know that the matter so kindly handed to us is correctly detailed, we think it will best answer the purpose of our readers to give them the whole of it as it has been sent to us; not omitting the naïvely-told tale of the adventures of the gamekeeper in his journeyings to and from Sweden, and the final success which crowned his active and ingenious endeavours. Let us also hope, that under the judicious management of Mr. Guthrie the head-keeper, and the active cooperation of this valuable subordinate with those of the other assistants at hand, the spirited and continuous attempts of the Marquis of Breadalbane will finally be crowned with success, and that this noble head of the grouse family may once more triumphantly crow over the

Scottish woods. "I send you," says Mr. Edward Buxton in a letter to a friend, "all the information I can collect of the introduction of the capercallies into Scotland. About fifteen years ago my father received in Norfolk a present of a cock and hen capercallie from Mr. Llewellyn Lloyd, who was residing in Sweden. They were kept in a house where they bred, and the hen brought off six young ones. They grew till they had nearly reached the size of pheasants, and then, in consequence of being exposed to the sun on a hot day, they, with the mother, all died. The cock was turned out, and lived two years in a wild state, when he was killed by accident. Several years after this my father was very kindly invited to shoot in Scotland on the Marquis of Breadalbane's moors, and he then proposed to him to make another attempt to introduce this bird into Scotland. He applied to Mr. Llewellyn Lloyd to procure them, and through his great perseverance and assiduity, sixteen hens and thirteen cocks were collected at Venusburg, and sent to England in 1837. Many had died on the road; which may be accounted for, as they were collected from all parts of Sweden. Lawrence Banville, Mr. Buxton's Irish gamekeeper, was purposely sent to Sweden to bring them to Scotland, and some extracts from his entertaining journal will inform you of his adventures until his safe arrival at Taymouth Castle with twenty-eight birds. They were received with delight by the Lord of Breadalbane, who has spared neither pains nor expense to give the experiment success."

2580. *Our new journalist* now takes up the pen, and thus relates his adventures:— "Saturday, April 1st, 1837. Yesterday I took leave of my little family, started on the coach to Norwich, and stayed there for the night. To-day I set out on the Ipswich coach. I halted at this town for the night, and agreed for a boat to take me down the river. — Sunday, April 2d. This morning I set out, and arrived at the inn at Harwich about twelve o'clock: the wind in the right quarter for us to sail to Sweden. — Thursday, 6th. This day I helped to take Mr. Lloyd's things to a boat that was going to the yacht; as I was getting into it, I slipped in, and hit my leg against one of the thwarts of it. I hurt it very much. — Tuesday, 11th. This day we weighed anchor. I was sick in a few hours, as also the following day. — Monday, 17th. After a somewhat cold and stormy passage, we this day made the Swedish coast, and got on shore. — Thursday, April 20th. At nine o'clock on this day I gained the long-wished-for spot (Mr. Lloyd's house near Venusburg), and all seemed as pleased to see L. Lloyd, Esq. as I should be to see my worthy master after a long journey. There are thirteen of those great birds for me to see in the morning. — Friday, 21st. This morning I was up at an early hour, and saw the birds: 'they look well — only one hen, which I fear will not be long here. L. Lloyd, Esq. went to Troul-hatten after the men to come to make the coops for the birds, which are about five feet in length by three and a half in breadth, with a division in each of them to enable me to clean them out on the sea if all is well. This day I saw martins. — Thursday, 27th. This morning another cock came to us: I was happy to see it; a fine bird it is. I was chiefly receiving the birds this day. L. Lloyd and his men went out to fish. — Thursday, May 4th. This day I am happy to say that there are three of the coops fit for my birds. — Friday, 5th. I got the whole command of the birds this day. One old cock died yesterday. I shall skin him. We had put the old cock in a cage by himself, and two in each apartment. This was a busy day with me, in doing all things for the birds. — Saturday, 6th. This morning I found the birds in the house were fighting; but what was the cause I knew not. I now and then put some of them into other apartments to see if it would be over; they were, however, not so easy to be put off, for one of their legs was broken. We were forced to put them in the coops by themselves. I was so sorry to see them fight, as I did not know when it would be over. We were all employed after the birds, as they seemed to be coming from the forest to us in good style. The cock that died weighed nine pounds. My leg was very painful to me. — Wednesday, 10th. This morning I did all things for my feathered tribe. The cock that I said was hurt; this day he is dead; his leg was broken in two places. — Saturday, 13th. This day I skinned two of the great cocks, and as I was dressing the skin of one of them, a drop of the stuff flew in the corner of my right eye: it is very painful to me. I keep watching every day for some of the eggs, but no sign of them yet. — Sunday, 14th. This day I was obliged to keep at home to keep the people from tormenting my little feathered family, as I had them now to attend to in this country. They all look well, with the exception of one hen. She feeds well, but did not go up to the roost. — Monday, 15th. This is a great holiday with them in this part of the world. We got a hen (black game), also some eggs. I went into the woods with a man, to see if he could show me a kind of grass the birds are fond of; but I am sorry to say it was not grown that he could find it. We again returned home with plenty of moss out of the woods to make some nests for the hens to lay in, in my houses, or to try if they would lay in them; they are all doing well, and I am happy to have it to say of L. Lloyd, Esq. that he is doing all in his power to get all he can for my master, as he says there were four or five dozen on the road, or ten, or perhaps more. Cold at night. It rained this day. — Wednesday, 17th. At this present time we have only one capercallie's egg, two black game eggs; they call

them *arro* in this part. — Saturday, 20th. A man came to inform Mr. Lloyd that he had got a capercallie in a house, also a blackcock, one egg of the black game, and four of the capercallie. — Monday, 22d. This morning I was well pleased to hear the black game that were in the house playing the same as when in the wood. It is a fine bird. The capercallie cocks have played a long time, which is amusing to any one to hear them. — Sunday, 28th. I waited on my birds. It is hard work on Sundays to keep the people from tormenting my birds, and I do not like to be too hard on them. — Tuesday, 30th. I was chiefly fishing; as to my birds I had them all settled in the coops; it put me out to find at night that the housekeeper wanted Mr. Lloyd to alter the birds again; but I asked his honour for what did he want to do so? is it not an old saying, 'let well alone?' which he agreed with. Any wild creatures the more seldom they are disturbed, the better for the birds or beasts; also for them that have them under their care. — Thursday, June 1st. I stopped at home attending to my birds; they were all well except one, which was either dead or killed; but it was very much torn by the rats. I went into the woods and got trees for them. — Tuesday, June 6th. Now this was rather a day of joy to me, after, it was a day of torment to me — now all was to be got ready to put the birds into the coops also; first one thing was to be done; all in a minute, it was to get boards and nail them on the boat, so that we could put the two sets of coops in it, with them facing each other, so that I could walk between them, to feed and water them on the river. On our way to Gottenburgh, as we were to be there on Thursday at the longest, any one may think what a day it was to me, how to get all this done by the close of night. Now came the grand points. It was to put the birds in order for their long journey, which I had to do by myself. I must say I had not time to think of any thing, but run from one place to the other; but in a word all was the same. Now, at ten o'clock, I got into the house to get those wild birds; they are chiefly hens; I got them all in safety into the coops: seven of the black game and two of the others into one coop, five cocks into another, four cocks into another, seven hens in another, also four cocks: in this manner we put them — seven hens in a coop by themselves; by this I think there are thirty-six birds under the six coops this night, — I may say a wet weary night to me — up to ten o'clock the night wet and cold. I got wet through; but that was little to be wondered at, as we had to carry the six coops full two hundred yards or more. I got a drop of coffee at one; then I took a big coat and a bunch of straw to the boat for my bed; but as ill-luck would have it to be, the rain came in in all parts where poor Larry was to take up his quarters; so by that I was forced to sit under the coops in the best manner I could, and I was as cold as ever I felt in my life: but this was not all; to add to my misery, the birds that I put in the coops were flapping against the coops to that degree, that I thought by the clear daylight I should have them all dead in the coops. I was waiting for daylight to appear. — Wednesday, 7th. As soon as I could take a look at them, it may be expected I did, to my surprise the coops of two of them were almost covered with feathers and blood. I then felt what I never thought of in my life, to see them in such a state; so I took up my blinds off them, and gave them all plenty of boughs and corn; I went up and got them up at the house; I went to the bed-room of Mr. Lloyd, and informed him of the state of them on board; by that he got up in a few minutes. All things were got in order for our voyage down the river, and we left the shore. The birds by this time were become settled, unless we went near them. — Thursday, June 8th. This day we arrived at Gottenburgh. We went to the boats, then to the schooner, which was to take me and my birds to Hull. We got the birds on board; they seemed well pleased to get them, to bring the birds over to England with them, as they said it was the greatest thing that ever was heard of in this life, to see so many of the birds alive and looking well. — Saturday, 10th. This morning they run down to the castle; then we got down to the mouth of the river: the wind was so that we could not get out; but at seven o'clock they weighed anchor, and now I took my last sight of the Swedish shore. — Sunday, 11th. At twelve o'clock they were out in the main ocean fifty-four miles; my birds were all right, they seemed to feed well. — Monday to Wednesday the birds were well. — Thursday I thought one was dying, but it recovered in a short time. — Friday and Saturday all well. — Sunday, 18th. This day the birds in one coop were very angry with each other; but I put them by themselves — wild and tame will not do very in the same coop. This evening we came close under the Yorkshire coast; we were in sight of the fields and houses. — Monday, 19th. We went on shore at Hull; the birds feed well at present. — Wednesday, 21st. I got all my birds on the steamer quite safe: they are all on the quarter-deck. — Thursday, 22d. This day was a fine one; the birds were all well. Nothing happened worth notice on the passage. — Saturday, 24th. This morning I set out from Dundee with a cart and mule, with four more, to the place where the birds came; they were all in the best of health; I got them up to the inn, fed them, and put the coops all in a settled place, and then got all things ready for packing them into my small baskets, that I had brought with me for the purpose from Sweden, and started off with a great many good wishes for our safe arrival. On my arrival at Teymouth Castle I put up my birds as well as I could for the night. — Sunday, 25th. I found the birds as well

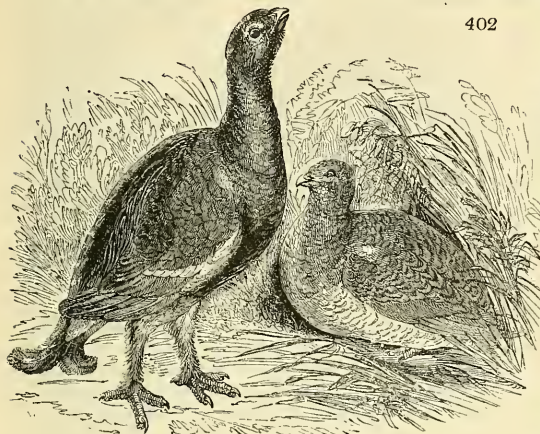
as I could expect; they all fed well. I must say that there are some of the birds' heads stripped almost of their feathers, striving to get out of the small places where they are cooped up. — Tuesday, 27th. The house intended for the birds being completed, I went and put them all in it; the hens into one end, and the cocks into the other. — Wednesday, 28th. I went to see the birds; the most of them were up at the top of the house, and had eaten of the trees that were there. — Monday, July 3d. To this time the birds were well. On this day I started by the mail-cart for Inverness, where I arrived (having stopped on the road) on the following Saturday. — Thursday, 13th. After an excursion to Sir G. Sinclair's I returned, and arrived this day once more at Perth; set out for Dundee; and, on Saturday 15th, got on board the Forfarshire, from which I was put down at Sheringham in safety on Thursday, the 20th."

2581. *Mr. Buxton observes further*, that "A part of the birds were turned out in the autumn of 1837, and part were kept in a house. In the year 1838 a brace only was reared by the keeper, but two fine broods were seen in the woods. In the summer of 1838 sixteen hens were forwarded to Taymouth; so that in all thirteen cock capercallies and twenty-nine hens have reached Lord Breadalbane. In the spring of 1839, instead of attempting to rear any capercallies, Mr. Guthrie placed the eggs laid by the birds in confinement in the nests of grey hens, who hatched them and brought them up in a wild state. The following extracts from two letters from Mr. Guthrie, Lord Breadalbane's head-keeper, will show how well the experiment has answered. The first is dated Taymouth, July 4th, 1839: — 'I have now to inform you, that I have seen a brood of young capercallies in the large wood behind Taymouth Castle. I saw four young ones, but there might have been more of them, as I did not disturb the place to look for them. They appeared to me to be about twenty days old. The game-hind that looks over that wood saw another brood, with eight young ones in it about a month old. This was two miles from the place where I saw the brood. I have also to inform you that we have forty-nine young capercallies, brought out by the grey hens this season. I saw a brood of young capercallies with a grey hen on the first of this month: there were seven young ones; they were about twelve days old. I tried to rear a few out of hand, but they are not doing very well with me. I will not try them any more after this season.' In a second letter, written Sept. 15. 1839, he says, 'With regard to the capercallies, I think we shall have between sixty and seventy young ones. I am not so sure what number of old ones we have, as some of them might have left their places when turned out. We have still a few of the old ones kept in, in order to have their eggs to put under the grey hens. The most we see of them in a brood is eight or ten, and very often single ones are seen wandering through the woods by themselves.' I am sorry to add, that though Lord Breadalbane has hitherto scrupulously abstained from shooting a single capercallie, and even went so far as to forbid that any black game should be shot in the neighbourhood of Taymouth, for fear that a young capercallie might be killed in mistake, others have not been so scrupulous; two of the birds were shot in the north of Scotland last year, and a hen has been offered this season to a poulterer in Princes-street, Edinburgh. I mention this because I am convinced that these birds cannot generally be established in Scotland unless sportsmen will unite to preserve them for some years to come, and until their numbers are very much increased." In the *Penny Cyclopaedia*, art. CAPERCALLIE, some notices there stated would imply, that this bird has been found much later than has been stated. We seem also to entertain an erroneous opinion on the difficulty of taming and inducing them to breed in a state of domestication. From Professor Nilsson's work, which, on the authority of the Ofver director of Uhr, states, that "birds at a forge in the province of Dalecarlia were kept together during the winter in a large loft over a barn, and were fed with corn, and got occasionally a change of fresh spruce, fir, pine, and juniper sprigs. Early in the spring they were let out into an inclosure near the house, protected by a high and close fence, in which were several firs and pines, the common trees of the place. In this inclosure they were never disturbed; and during the sitting season no one approached except the person who laid in the meat, which at that time consisted of barley, besides fresh sprigs of the kinds before mentioned. It is an indispensable rule that they shall have full liberty, and remain entirely undisturbed, if the hens are to sit and hatch their young: as soon as this had occurred, and the brood were out, they were removed to the yard, which was also roomy, and so closely fenced, that the young ones could not escape through; and within this fence were hedges and a number of bushes planted. Of the old ones one of the wings was always clipped, to prevent their flying. I have seen several times such broods, both of black game and capercallie, eight to twelve young ones belonging to each hen. They were so tame that, like our common hens, they would run forward when corn was thrown to them. They should always have a good supply of sand and fresh water." Although the learned professor is so eloquent on the domesticity of the capercallie, he yet informs us, that he never becomes so tame and familiar as the blackcock. His natural pugnacity appears to be inherent in him; and, like the turkeycock, will attack persons when in the humour. Even the wild ones in the wood, we are told by the same authority, will dispute the path of those who enter the wood.

SUBJECT. 2. *The Natural History of the Black Grouse.*

2582. *The black grouse (Tetrao Tetrix Linn.).* This bird is also more familiarly known among sportsmen as the blackcock, and likewise as black game, as the female is designated the grey hen. Black grouse (*fig. 402.*) are so well described by Mr. Daniel, that we shall make use of some of his notices. "It was," he observes, "abundant in the northern parts of Great Britain, especially in Scotland, but becomes gradually more scarce, owing to various causes: the great improvement in the art of *shooting flying*, the inclosure of many moors and commons, added to the mischief done by burning the heath on the moors in order to fertilise them (which, notwithstanding the *statute* to prevent such fires, it is difficult to convict upon, the *ling* being commonly set on fire in the night, and which will often

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extend for several miles): this burning is chiefly done in the spring; and many nests, with the old birds upon them, are thereby destroyed. Perhaps the facility of conveying these birds to the metropolis, or great trading towns, by the means of numberless wheel carriages, may likewise contribute much to their scarcity: some are met with in Wales, Cumberland, and the Moors in Yorkshire; the Earl of Uxbridge has a sprinkling in Staffordshire; the Boulderwood and Rhinefield Lodges in the New Forest, Hampshire, afford tolerable plenty. The blackcock is more a forester than even the pheasant, scorning all connection with man, and very rarely tasting the dainties of the stubble; the wild forest is his chief delight. Black game was formerly much more abundant in the New Forest than at present: the race also has the honour, which no other bird can boast, of being protected as royal game. When the chief-justice in Eyre grants his warrants to kill game in the forest, he always excepts the blackcock, together with the red and fallow deer. They are met with in Sussex, and some in Surrey, but are only sparingly scattered here and there, as one advances south; yet neither this bird, nor the ptarmigan, is at present, we believe, found in Ireland, although the red grouse are in plenty among the mountains and bogs of that country. The black grouse are fond of wooded and mountainous situations, and perch like the pheasant: their food is various,—they eat the bilberry, mountain fruits and berries; and, in the winter, the tops of the heath: in the summer they sometimes descend from the hills to feed on corn.

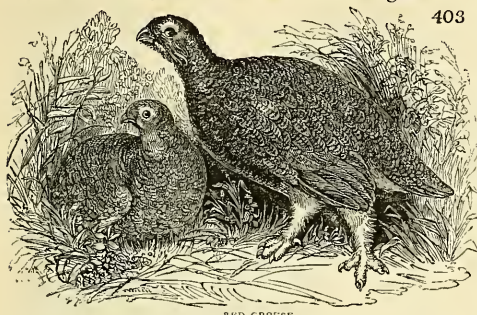
2583. *The figure and proportions of the male bird are as follow:—*"Length, from one foot ten inches to two feet; breadth, two feet nine inches; and in weight is nearly four pounds: the bill is dusky black; the eyes dark blue; below each eye there is a spot of a dirty white colour, and above a larger one of a bright scarlet; the plumage of the whole body is black, glossed over the neck and rump with a shining blue; the coverts of the wings are dusky brown, the greater are white, which extends to the ridge of the wings, forming a spot of that colour upon the shoulder when the wing is closed; the quills are brown, the lower parts and tips of the secondaries are white, forming a bar of white across the wing; there is likewise a spot of white on the bastard wing; the legs and thighs are covered with dark brown, mottled with white feathers; the toes are toothed on the edges, like those of the cock-of-the-wood; the tail consists of sixteen black feathers, and is much forked—the end of the exterior feather, which bends greatly outward, seems as if cut off; the feathers under the tail, and inner coverts of the wings, are of a pure white. The female bird of the black game is only one foot six inches long; breadth, two feet six inches; and weighs two pounds: the eye has the dusky white mark beneath like the male; the head and neck are marked alternately with bars of dull red and black; the breast with dusky black and white, but the latter predominates; the back, coverts of the wings, and tail, are similar in colour to that of the neck, except the red being deeper; the inner webs of the quill feathers are mottled with black and white; the inner coverts of the wings are white, and a white spot is found on the shoulder of both sexes; the tail is slightly forked, consisting of eighteen

feathers, variegated with red and black; under the tail the feathers are white, marked with a few bars of black and orange. The female makes an artless nest on the ground, and lays from six to eight eggs, of a dull yellowish white colour, marked with numbers of very small ferruginous specks, and towards the smaller end with some blotches of the same hue, and hatches late in the summer. The young males quit their mother in the beginning of the winter, and keep in flocks of seven or eight until spring; during that time they inhabit the woods. In their first feathers they resemble their mother, not acquiring their full plumage till near the end of autumn, when it gradually changes, and assumes that bluish black colour which it afterwards retains." (*Rural Sports*, vol. iii. p. 101.)

2584. *It is well known that the "black game,"* like other members of the grouse family, are polygamous, and that in January, February, and March, the plumage of the blackcock assumes a glossy steel blue, which, with his carriage at this season, makes him look like a feathered warrior. Sir William Jardine observes, that "In the warmer sunny days, at the conclusion of winter and commencement of spring, the males after feeding may be seen arranged on some turf fence, rail, or sheep-fold, pluming their wings, expanding their tails, and practising, as it were, their murmuring love-call. If the weather now continue warm, the flocks soon separate, and the males select some conspicuous spot, from whence they endeavour to drive all rivals, and commence to display their arts to allure the female. The places selected at such seasons are generally elevations; the turf inclosure of a former sheep-fold which has been disused, and is now grown over, or some of those beautiful spots of fresh and grassy pasture, which are every where to be seen, and are well known to the inhabitants of a pastoral district. Here, after perhaps many battles have been fought and rivals vanquished, the noble full dressed blackcock takes his stand, commencing at first dawn; and, where the game is abundant, the hill on every side repeats the murmuring call, almost before the utterers can be distinguished. The cocks strut around the spot selected, trailing their wings, inflating the throat and neck, and puffing up the plumage of those parts, and the now brilliant wattle above the eyes, raising and expanding their tail, displaying the beautifully contrasting white under-covers, and imitating, as it were, the attitudes of a little turkey-cock. He is soon heard by the females, who crowd around their lord and master." (*Naturalist's Library*, vol. iv. p. 154.) As the season of incubation advances, the pugnacious mania of the males recedes, and they then, separating themselves from the females, seek shelter among brushwood and large fern-beds to complete their moult, leaving to the female the maternal duties. The nest is made on the ground, and usually in moist situations; but when the young are hatched and thrive, the mother and brood seek Alpine situations, not choosing much heather, but such spots as though lofty are moist, and present rank and luxuriant herbage. The food of the black grouse during the summer consists of the seeds of the herbs, grasses, and berries of Alpine plants, as the cranberry, crowberry, blackberry, &c. In the winter they feed on the fir shoots and the catkins of hazel and birch, which give a peculiar flavour to their flesh; so much so, that the epicure can determine by the taste whether the blackcock he eats was fattened on the moist moor, or on the Alpine heights. The blackcock, though not equally grand in appearance with the wood grouse, is yet a martial looking bird; and his upper parts dressed in a rich steel blue, with the pitchy black of his under parts, when joined with the anomalous form of his forked tail, make him a very striking object. The female bird is only remarkable by the contrast to be observed between her and the male; and, as justly observed by Sir William Jardine, she exhibits the same unobtrusive colours, which run also through the sex in the rest of the group. In her we see, however, a chaste and beautiful arrangement of brown, black, and greyish yellow feathers; and, in her likewise, the fork of the tail is slightly indicated. The black grouse will also live and thrive in menageries, but we have few, if any, notices of its breeding in confinement. Bewick, who is usually so correct in his descriptive account of habits, personal proportions, and colours of animals, as well as their localities of dwelling, appears not to have been aware that in his time black game (*Tetrao Tetrix*) were to be seen as indigenous inhabitants in the south of England. In Wolmer Forest, we are told, in days long past, they were to be found in plenty, and still on Leith Hill, on Ashdown in St. Leonard's, in the New and in Bere Forests. They are also yet to be met with on the estates of the Marquis of Anglesea at Beau-Desert, Staffordshire, and likewise near Barnstaple, Devonshire. Sir William Jardine appears to consider that black game have greatly increased within the last few years, spite of the numerous sportsmen who pursue them. Experience also, it may be well to note, seems to have contradicted the received opinion that black grouse drive away the red grouse; and when we take into the account the well known fact, that their breeding and feeding places are neither of them the same, the fallacy of the opinion becomes apparent. The red grouse is an upland bird, and seeks the dry heather; the black grouse, on the contrary, seeks moister localities, and more woody cover, particularly he luxuriates where pine and birch are plentiful. Having full experience before our eyes of the havoc made by poachers and reckless sportsmen on the capercallie of Scotland, can we be too much on the watch to prevent marauders from doing the same by the black grouse? We think we cannot.

SUBJECT. 3. *The Red Grouse.*

2585. *The red grouse (Tetrao Scoticus Linn.)* as seen in fig. 403. bears the same stamp of nobility with the rest of his congeners. The sporting, as well as the natural



RED GROUSE.

403 history, of these birds is so spiritedly sketched by Sir William Jardine, that we have laid by our own introductory matter to make room for his portraiture of this popular member of the grouse family, and of the delights which attend the pursuit of it, — a pleasure, the remembrance only of which thrills through us, and to enjoy which, were it not for a sense of what we owe to the public as regards this our long promised work, we would, notwithstanding our increased years, have long ere this been on the Moors of Cumberland, or have “hired a

hill” for ourselves in Scotland: but to our subject: — “The light air of the early morning of a fine Twelfth,” says our authority, “and the free and open, almost unbounded, prospect, exhilarate the spirits; while the boldness of the game upon discovery, erectly uttering his cry of warning to his brood — his vigorous lengthened flight, so long as to create doubts of his being again seen — carry with them a continuation of excitement, long after it is satiated with following the skulking black game, or the more rural one of walking up partridges. But, independent of this claim upon the sportsman, it has another: the red grouse is exclusively confined to the British Islands, and has never been found on any part of the Continent; and it would be much to be regretted if unlimited persecution, or want of preservation, should in after years exterminate this bird, so exclusively national.” (*Naturalist's Library*, vol. iv. p. 145.) Alas! as regards this esteemed fowl, how great the change since the time when the Earl of Strathmore's gamekeeper, for a considerable bet, undertook to shoot forty brace of this game upon his lordship's moors in Yorkshire in one day, and by two o'clock of the day he had killed forty-three brace. Is it not a matter of some doubt, whether he could now kill ten brace in the same time? Nevertheless, in many parts of Scotland, red grouse are still plentiful; and there are many estates there, that every year appropriate certain portions for letting off to sportsmen, who usually locate themselves in the neighbourhood for the time being. These portions are called “hills,” and each commands a certain rental for the season. We were once solicited to join a party for this purpose, which brings to our recollection a story told us by a gentleman of much respectability among the mercantile community, as was also the individual to whom the story alludes. Both these gentlemen belonged to a grouse party, who hired a hill on which they located themselves, having tents pitched, and being attended by servants, &c. &c. A Mr. K——, one of the party, was particularly fastidious as regarded cleanliness in what he ate; so much so, that not only nausea, but vomition likewise, frequently followed any unpleasant sight. It happened on one of the grouseing days that this gentleman, and two others of the party, extending their walk farther than to allow of the possibility of return at the appointed time to dinner, the party entered a mountain hut, or bothy, of a poor family, and being hungry, inquired of the “gude wife” if she could find any thing for them to eat. Her reply was, that she could give them nothing but some slices, to be taken from the carcass of a mountain sheep then hanging up the chimney, enveloped in the smoke of the heather, which were to be toasted. Two of the gentlemen were well pleased to essay mastication on the mountain mutton, which perchance might be a goat. Be that as it may, the next difficulty to get over was what Mr. K——, the squeamish gentleman, was to have: nothing, however, but starvation stared him in the face, until he accidentally cast his eyes on an old hen just then appearing at the door; hope flashed across his mind, and impatiently he inquired whether the fowl ever laid eggs, and whether any were to be procured. Here again the gude woman did her best “to accommodate the gentleman,” and having mustered two or three of the old hen's eggs, she consigned them to the frying-pan, which was previously, at the desire of Mr. K——, well washed out, and in a few minutes afterwards the water within it was simmering over the blazing ling, the squeamish sportsman watching most carefully and determinately that no dirt, for that day at least, should defile his stomach. Short-sighted man! how likely are our firmest resolves to be frustrated! the careful woman, although forewarned of the necessity, that whatever this gentleman could have to eat must be clean beyond the possibility of defilement, in her anxiety to know whether the egg was in an eatable state, stooped to the ground, and biting off a stem of the heather, which served as carpet for the mud floor, she first tapped the shell

against the edge of the frying-pan, and then inserted the bit of heather half way down the egg, to see the state of the inside. Our friend has frequently told us it was a scene for the pencil of Hogarth. Mr. K——'s stomach turned; he stormed; he almost raved; but at last consoled himself with his own wit, in discovering that it was only in Scotland the inside of an egg could be dirtied. We were not present, but from the respectability of the relator, who was one of the party, we believe the story implicitly.

2586. *The personal description of the red grouse is as follows:—*“Length, fifteen inches; the weight about nineteen ounces: the bill is black; the eyes hazel; the nostrils shaded with small red and black feathers; at the base of the lower bill there is a white spot on each side; the throat is red; each eye is arched with a large naked spot; the body is beautifully mottled with deep red and black, which gives it the appearance of tortoise-shell; the breast and belly are of a purplish hue, crossed with small dusky lines; the tail consists of sixteen feathers, of equal lengths, the four middlemost barred with red, the others black; the quills are dusky; the legs are clothed with soft white feathers down to the claws, which are strong, and of a light colour. The female is somewhat less; the naked skin above each eye is not so conspicuous, and the colours of its plumage, in general, much lighter than those of the male.” (*Bewick*, vol. i. p. 301.)

2587. *Red grouse pair in the spring*, and lay from five to ten eggs, either on the bare ground, or, as we have seen them, on a few mosses and a little heather scraped together in some indentation of the soil, and often sheltered by a bush. In many cases no concealment is attempted beyond the sprigs of heather or broken ground around, a certain proof of the original wild nature of the animal. The pairs of red grouse are more natural parents than those of the wood grouse or the black game, the cock bird of each of which separate from their respective hens, and take no more notice of the brood than our farm-yard chanticleer. The young of our present subject are, on the contrary, attended with care, and their battles are resolutely fought for them against the ground vermin and the winged destroyers, as crows, which are known to attempt the destruction of the young birds, but are even more injurious to their eggs. The poults follow the mother the whole summer after the manner of partridges, nor is the cock bird wanting in his attendance on the brood, but it is not observed to be so close. The annual burning of the ling for the benefit of the ground is very hurtful to the increase of the grouse, as it not only prevents some from laying, but also destroys many eggs already laid; and, it is said, not infrequently the hen bird likewise, when sitting hard, is destroyed also.

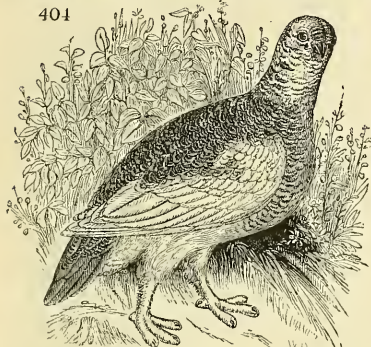
2588. *The grouse is not irreclaimably a wild bird*; on the contrary, it has even bred in confinement. Mr. Thoruhill mentions one which, at a Mr. Grierson's, of Rathfarnham House, county of Dublin, in 1802, produced a clutch of birds. He notices also a Mr. Green, of Green Mount, county of Tipperary, Ireland, who had two brace of grouse for several years, which were so tame that it was a common practice with this gentleman (who was a famous sportsman) to bring the birds and his setters into the parlour together, and divert himself with seeing the dogs set; the birds did not pay the smallest attention to the dogs, or indicate the slightest symptom of a wish to escape.” (P. 85.) When we sojourned at Hexham during the summer months, we were much on the extensive moors between that town and Alston, in pursuit of curlew and plover, which are exceedingly abundant there. In our trips it was not infrequent for us to walk up a grouse crouching from almost under our feet, and which mark of confidence produced a determination in us to deserve it, by never firing at one of them; the consequence of which was, that in a little time the grouse on these moors, notwithstanding our constantly shooting at plovers, heeded us very little. We were also equally interested with the intelligence of our dog, which was such, that he likewise left off pointing them, though equally ready to hunt and point other fowl. Sir William Jardine has an interesting remark to the present purpose, on the vast change that has taken place in the habits of grouse bred near cultivated districts; which is, that these birds have learned to depend on the labours of the husbandman for their winter's food; and that, instead of seeking a precarious subsistence during the snow from tender heath-tops, &c. they migrate towards the lower grounds, where hundreds crowd to the stooks, and as the grain there often remains out a considerable portion of the winter, so they escape starvation even in the worst seasons. The whortleberry, in its varieties of black and red, as well as the common heath-berrie, are also resources for food for grouse, available during the winter months. It is therefore a great mistake to suppose, that these birds are adverse to eating corn; on the contrary, the whole family are granivorous. We have seen them in the vicinity of Hexham occasionally descend from the high grounds, and shelter themselves among the stubble, both of barley and oats; and, on more than one occasion, when we were engaged in partridge shooting, we have dislodged them from among the sheaves there called stooks, particularly when the weather has been such as to prevent an early carrying of the corn. Indeed, in all grouse localities these birds, when pressed for food, or nipped by boisterous weather, will leave the hills and come down into the strath and glen, and actually sit in rows on the mounds which inclose the fields of the more northern farmers; sometimes they even perch on the bothies, or humble dwellings, of the Highlanders. If we

could influence the ardour of the sportsman when he is out, we would request of him to spare both the old cock and the hen bird of every brood. When the cheepers are almost full grown, this may be done without any great sacrifice; and if he had seen so much of the devotion of both parents to their young as we have, we cannot help thinking he would accede to our request. The very self-devotion which makes the parents so ready a mark, by the lingering flight they make to secure the retreat of their brood, should plead for them, and particularly since the sacrifice is not considerable, when the cheepers are now almost arrived at maturity, and consequently are fit prey for the shooter.

SUBJECT. 4. *The Ptarmigan.*

2589. *The ptarmigan, or white grouse*, as Bewick calls it (*Tetrao Lagopus* Linn.), is the last and the least individual of the British grouse family (fig. 404.). It is also not unknown

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THE PTARMIGAN.

on the American continent, but is more abundant here than there. Bewick describes it very accurately, as being nearly the size of the red grouse. It has a black bill, and its summer dress is a pale brown or ash colour, the upper parts of the body mottled with small dusky spots and bars; the bars on the head and neck are somewhat broader, and are mixed with white; the under parts are white, as are also the wings, excepting the shafts of the quills, which are black. In winter it changes to a pure white, except that in the male there is a black line between the bill and the eye; the tail consists of sixteen feathers—the two middle ones are ash coloured in summer and white in winter, the two next slightly marked with white near the ends, the rest are wholly black; the upper tail coverts are

long, and almost cover the tail. The white grouse is fond of lofty situations, where it braves the severest cold; it is found in most of the northern parts of Europe, even as far as Greenland. In Britain it is only to be met with on the summits of some of our highest hills, chiefly in the Highlands of Scotland, in the Hebrides and Orkneys, and sometimes, but rarely, on the lofty hills of Cumberland and Wales. Buffon, speaking of this bird, says, it avoids the solar heat, and prefers the biting frosts on the tops of mountains; for, as the snow melts on the sides of the mountains, it constantly ascends, till it gains the summit, where it forms holes, and burrows in the snow. They pair at the same time as the grouse; the female lays eight or ten eggs, which are white, spotted with brown; she makes no nest, but deposits them on the ground. In winter they fly in flocks, and are so little accustomed to the sight of man, that they suffer themselves to be easily taken, either with the snare or gun. They feed on the wild productions of the hills, which sometimes give the flesh a bitter taste, but not unpalatable; it is dark coloured, and, according to M. Buffon, has somewhat the flavour of a hare." (P. 303.) Mr. Pennant says ptarmigans were formerly to be met with on the hills of Westmoreland and Cumberland, and also on the opposite border of Scotland; but all these, except a few solitary pairs occasionally seen on the precipices of Skiddaw, appear to have vanished. Sir William Jardine notices another bird lately brought into this country, known as the *rock ptarmigan*, which, from its close resemblance in plumage, has been confounded with the common ptarmigan. At present it is extremely scarce; and, as we hear very little of it, it is probable that it does not increase. It may be known by its being somewhat smaller in size; and Sir William Jardine tells us that it may be distinguished from the common ptarmigan by the black feathers of the back being cut into upon the edges, with patches of yellow only; which, contrasted with the larger size and grey plumage of the other, serves to render it conspicuous.

2590. Mr. Daniel's account of this bird must likewise interest every sportsman:—"It might be curious to investigate the internal structure of the ptarmigan, and discover the reason why cold seems so necessary to its existence, and why it so carefully shuns the presence of the sun; while almost every animated being longs for his return, and hails his approach as the source of delight, whose benign influence inspires and enlivens all nature. Must we ascribe it to the same causes which make the nocturnal birds retire from his effulgence? Ptarmigans are thinly scattered upon the lofty hills near Keswick in Cumberland, and some few in Wales; they are chiefly met with on the tops of the highest hills, of the Highlands of Scotland, in the Hebrides and Orkneys; they are found on the hill of Ben-lawers, and on Ben-more Mountain, near Loch Tag, inhabiting the very summits amidst the rocks, perching among the grey stones, and during summer are scarcely to be distinguished from them by the similarity of their colour; they seldom take long flights, and never soar aloft, but fly by taking a small circle like pigeons; they are silly birds, and

so tame as to bear driving like poultry, and to suffer a stone to be flung at them without their rising; yet, notwithstanding this apparent gentleness of disposition, it is impossible to domesticate them; they refuse to eat when caught, and always die soon afterwards. So heedless are they, that it is not necessary to have a dog to find them. As an edible, they taste so like a grouse as to be scarcely distinguishable (are they not much less *sapid*? Editor), and keep in summer in small packs; but never, like the grouse, take shelter in the heath, but beneath loose stones. In winter the ptarmigans assemble, and fly in flocks, still preserving their stupid tameness: at that season, when they perceive any person, they remain quiet upon the snow, to avoid being seen; but they are often betrayed by their whiteness, which surpasses the snow itself. They are soon reconciled to the sight of man, and are often caught by presenting bread, or a hat is thrown before them, and a noose slipped round their neck whilst engaged in admiring this new object; or they are dispatched by the blow of a stick behind; in short, they may be destroyed by any device that may be employed against them." A note is appended to this account, too much to our present purpose to be omitted. "The only preservative," says my sporting friend, "that Nature seems to have afforded, is their alighting upon stones so exactly of their colour, as to render it difficult for the eye to discern them. I killed forty-three in one day above Loch-Laggan, which lies between Dalwhinnie and Fort Augustus in this district; and also found whistling plover and dottrell; and frequently, at the tops of these mountains, are lakes full of trout and char; in one of these, called Coriadar, about a mile distant from Loch-Laggan, small trout, about three or four inches long, so swarmed, that in fishing with six flies, six of these diminutive trout were often taken at a throw." (*Rural Sports*, vol.iii. p.114.) To this we would further add, for the consideration of the more philosophic of our readers, what also has been offered by one of that stamp in illustration of the *harmonies of Nature* evinced here:—"Perhaps the changes of plumage in none of the feathered races are more worthy of attention than those which the ptarmigans undergo. Their full summer plumage is of a yellow, more or less inclining to brown, beautifully barred with zigzag lines of black; their winter plumage is pure white, except that the outer tail-feathers, the shafts of the quills, and, in our species, a black streak from the eye to the beak, is apparent. Under these showings, let us first examine the reasons for their change of plumage, and next the mode in which it is conducted. The brown patches of heath on the rocky sides of the mountains assimilate well, in their broken and blended tints, with the summer livery of the ptarmigan; and as concealment from the observation of enemies is one of the laws of Nature, this end is, so far, well answered. But when the mountains are covered with snow, when the whole surface of the country is one wide waste of dazzling white, the brown ptarmigan can only escape the notice of its foes by adopting a corresponding dress; so that, while crouching in the snow, it will scarcely attract the glance of the Iceland falcon, or the snowy owl. Nevertheless, it will appear that the safety which arises from its change of plumage, is neither the sole nor the principal motive for that change. This motive we consider to be the provision against the intensity of the cold accruing to the bird by the transition in question; for it not only happens that the plumage turns to white, but it becomes much fuller, thicker, and more downy; the bill is almost hidden; and the legs become so thickly covered with hair-like feathers, to the very ends of the toes, as to resemble the legs of some well furred quadruped—the hare of the same wild regions, for instance. It is well known that *colour* greatly influences the rate at which bodies either reflect heat, or acquire and part with it; and that objects which do reflect heat the most, part with it the least: now, it has been observed, that "reflection takes place most readily in objects of a white colour, and from such, consequently, heat will radiate with difficulty."... "If two animals, one of a black colour and the other white, be placed in a higher temperature than that of their own body, the heat will enter the one that is black with the greatest rapidity, and elevate its temperature considerably above the other."... But when "these animals are placed in a situation, the temperature of which is considerably lower than their own, the black animal will give out its heat by radiation to every surrounding object colder than itself, and speedily have its temperature reduced; while the white animal will part with its heat by radiation at a much slower rate. The winter colour of the ptarmigan, therefore, in conjunction with its increased fulness of plumage, tends to limit the expenditure of the vital heat generated in the system: some expenditure, however, must and does take place, beyond that of summer; to meet which, the energies of the system are taxed to increase the ratio of its production. This power in the animal system of generating heat, is the principle upon which all animals are enabled to withstand the effect of cold, and to preserve life and health in a low temperature." (*Penny Magazine*, 1835, p. 329.) We ourselves beg to observe, that it has been disputed whether this change was the effect of a moult, or whether the feathers themselves underwent a change; but the matter is now set at rest, and it is proved that Nature goes the shortest way to work, and that also most convenient to the animals; for, as it appears, it is the colour, and not the feathers themselves, which change. Had it been otherwise, it would have left the poor birds exposed to the cold, as well as to their pursuers. A partial moult may take place, but it is known to be but a partial one, from continuous observations

made to determine this point. We therefore continue the following extract from the *Penny Magazine*, as probably that most in accordance with truth:—"Recent experiments have proved beyond doubt, that the change is that of the colour, not of the feather (as stated above); at least, the plumage does not undergo a general moult for that purpose. The moult of those birds, which, like the ptarmigan, change their livery, appears to be gradual, in order that the system may not be taxed too much, seeing that it has already to struggle with the debilitating effects of cold. Besides all this, it is scarcely reasonable to suppose that the young ptarmigans should have the brown plumage of their parents to moult, when they have only just assumed it. The rationale then appears to be thus: as the winter approaches the summer dress loses its colour, and gradually passes into white; while, at the same time, an addition of new white feathers increases the fullness of the plumage to keep up vital heat. On the approach of spring the older feathers of the past year are thrown off, their place being supplied by coloured ones; while the white ones that sprang up as the winter set in, gradually gain the hue which was then denied them. Hence, in spring, ptarmigans are seen in a livery irregularly party-coloured, the new feathers having been developed, while the white ones that endure are as yet uncoloured; these having acquired their tints will be moulted in autumn, so that no individual feather undergoes more than one mutation. It will be seen from this, that the moult is never simultaneously performed; but that a partial loss and accession of feathers, except in the depth of winter, is almost constantly taking place." (P. 330.) We claim indulgence from the reader for engaging him so long; but we would fain hope his own wish for investigating the principles on which Nature acts in these cases, will lead him rather to thank than to blame us. We would have every sportsman be a naturalist also; and we would equally wish that the accomplished ornithologist should likewise, in every instance, be a sportsman as well.

2591. *Ptarmigan* are of the intermediate size between the partridge and grouse. "In winter," writes Mr. Dunbar, of Loch-Inver, "they are snow white, with the exception of the quill-tail feathers, which are black. In February they begin to get a few reddish mottled feathers, intermixed with white, which changes more dark every day till the middle of June. The cock is then a speckled black; the hen very much resembling the hen red grouse, except in the quill feathers of the wings, which, in both sexes, differ from the red grouse, as they are always found white. In July the birds undergo a regular moult, and male and female appear with the young in the same dress, which is a spotted blue slate colour. August finds them almost in the same costume. In September they begin to get somewhat lighter in colour. All the blue feathers begin to get white at the tips, becoming every day whiter until they are pure white, which they will be in December. The male may at all seasons be easily distinguished from the female by his having a black streak from eye to bill. On all the high hills in the north of Scotland these birds may be found. For some years back the ptarmigan seem to have suffered as much from disease as the red grouse. Those that I examined had the appearance of disease in the intestines. Since the introduction of sheep in the Highlands, grouse of all kinds have become more scarce; and as a proof that the sheep are injurious to grouse, I know some moors where the grouse have become as plentiful as ever since the proprietors have taken off the sheep. The smearing of sheep, especially with poisonous drugs, no doubt tends to create disease amongst the game. After sheep are smeared, they lie on the heather, and leave that heather saturated with smearing matter. Here the grouse feed, and the tar and other poisonous materials no doubt cause disease of the bowels." The Hudson's Bay ptarmigan, or white partridge, is particularly entitled to notice from the immense numbers which are taken, and also to afford an opportunity of remarking the extra plumage which Providence has allotted it; for in winter every feather, except those of the wings and tail, becomes double, a downy one shooting out from the base of each, which affords an additional protection against the cold of their winter lodging; and this is the only species of grouse, in North America, to which that warm covering for the feet has been given. These birds make their nests on dry ridges on the ground, and lay from nine to eleven eggs powdered with black. Every morning they take a flight into the air directly upwards, to shake the snow from their wings and bodies; they feed morn and eve, and in the middle of the day bask in the sun, which they seem not to dread, like our ptarmigan, calling to one another in the morning with a loud but interrupted note, feeding in the intervals, and then resuming their call. In the beginning of October flocks of two hundred or upwards assemble, and live much among the willows, the tops of which they eat, and thence take the name of *willow partridge*. About the beginning of December they appear less plentiful, retiring from the flats about the settlements on Hudson's Bay, to feed on the berries in the mountains, where, in that month, the snow is less deep than on the low lands, in consequence of the winds sweeping the snow (which, owing to the intense cold, appears like fine powder) from the uplands into the plains. Their flesh is much esteemed by the Europeans at Hudson's Bay; they are as tame as chickens, especially in a mild day: in their wildest state, by being driven about and fired at with gunpowder, they grow so weary by those short flights as very soon to be tame. If the hunters see the birds unexpectedly likely to take a long flight, they imitate the crying

of a hawk, which so greatly intimidates them that they instantly settle. Nets twenty feet square fixed to four poles, and supported in front in a perpendicular direction with sticks, is the usual mode adopted to take them; a long line is made fast to these props, the end of which a person holds, who lies concealed at a distance: several people are then employed to drive the birds within reach of the net, which, when pulled down, often covers fifty or sixty. At this time so plentiful are they, that ten thousand are taken for the use of the settlement, from November to the end of April. In former days they must have been infinitely more numerous. Sir Thomas Button relates, that in the winter of 1612 he took eighteen hundred dozen of these and other fowl. This capture may astonish us, but the success and appetite of M. Jeremie and his companions will astonish us still more, who asserts that there were taken and eaten in one winter, between himself and seventy-nine others, 90,000 grouse and 25,000 rabbits, being about 1125 grouse and 312 rabbits per man." (*Ib.* p. 114—118.) It is by viewing the products of Nature in these extended points of view, that our opinions of them are enlarged. It is thus we are taught, that animals of every kind are rendered subservient to the purposes of man, who, by his intelligence, has gained such a dominion over them, as enables him to bend them to his purposes; not, be it observed, by his bodily but by his mental powers; which considerations should teach him, in all cases, so to act as to equalise the waste and supply.

SECT. II. *The Practice of Grouse Shooting.*

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GROUSE SHOOTING PARTY.

2592. *Brother sportsmen*, what think you of our localisation on one of the Scotch grouse hills? (*fig.* 405.) Taking, however, the precaution of the old soldier, who seldom intimates the direction the enemy has taken to other than one of his own party, we do not name the exact spot; but, be assured, if you will but do as we did, — make your way to Edinburgh, and expend a few pounds among the gunmakers, newsvenders, writers (*i. e.* stewards), &c. &c., your inquiries of *grouse shooting quarters*, often called *Hills*, will be satisfactorily answered. Regard our *snuggery*. No! we cannot in honesty call it so; for, according to our united wishes, it opens on a broad expanse of sky, earth, and water; where our whole “renting” can be seen, and thus intruders warned off. If our beds are not in themselves soft, our labours make them so; and if our cooking is inferior to what might be obtained at the Mansion-house, or a West-end club-house, our bracing exercise makes our repast sweet, as the mutual comparison of our walking notes of the day gives a zest to the whole. From our tented canopy some of us in the evening also again stray in pursuit of sport, with a relay of fresh dogs, and on our return our game bags attest that our stroll has been attended with pleasure and gain to ourselves, but with loss and pain to the birds. Another of the party, to vary the scene, probably wends his way to the burn below, and with his rod, line, and fly, secures a dish for the morrow’s wants. Dusk arrives—the outer tent coverings are let down—our lamps are lighted—our cigars and our materials for moistening our mortal clay are spread before us—and who is so happy as we? Next year, good reader, if you will apply to our town quarters, we shall be happy to have you as one of the party!

2593. *The Twelfth of August* — *auspicious day!* says many a sanguine gunner; how fortunate also, says another, that it occurs on a Monday, thereby giving us six days of uninterrupted sporting! True: for ourselves we have nothing to fear; but it may be far otherwise with many a staunch sportsman, who has neglected to secure to himself the privilege to shoot over some preserved ground; for it is ten to one but that, on all the large moors in the vicinity of coal or lead mines, the miners have already been many days out, and, ere this, have sent off to the markets some score dozens of the birds you are in pursuit of, *i. e.* the red grouse. The extensive track of moorland, that lies between the town of Hexham

in Northumberland and Alston in Cumberland, now properly protected, forms a vast preserve for grouse; but as much of it is occupied by coal and lead miners, it follows, we are sorry to say of course, that it furnishes a superabundance of able marauders, who would destroy most of the birds some days before the appointed time. We were on one occasion at Alston two days before the 12th of August, and by favour were shown in an upper room of an inn upwards of a hundred brace of dead grouse intended for the London market. We presume we hardly need observe, that of all shootings that of grouse shooting is the most laborious to both master and dog. As to himself, he can be some judge what he can do; but we would take this early opportunity of remarking, that if he means to pursue the sport ardently, he should be furnished with two brace of dogs at least, whether of setters, pointers, or spaniels: but of this more anon.

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SCOURING THE MOORS.

SUBJECT. 1. *Grouse shooting Localities.*

2594. *Grouse shooting localities.* The black grouse used to be common in the New Forest in Hampshire, and in some parts of Devonshire, Derbyshire, and Staffordshire; but we doubt whether any of the red breed are now to be found in either of these places. Yorkshire is the nearest English locality where this bird is yet in tolerable plenty; but the ravages of the lead miners have here likewise much lessened the number; and although great pains have been taken to restrain these gentry, they have continued to evade them all. It is true that the strenuous attempts of some noblemen and great landowners have occasionally, for a time, checked the practice; but it has never been entirely put a stop to, and it is very doubtful whether it ever will. On one occasion, we are told, a party of miners came in contact with Lord Stanley at Mucor; and against one of the number, a notorious character, his lordship had instituted some legal proceedings. This fellow, addressing his lordship, observed, that if, the proceedings were immediately stayed, they would abstain from trespassing on his lordship. And this was no sooner agreed to than the whole party passed over to the moors of Legh Keck, Esq., where, after shooting for some time, they were met by that gentleman, who was also shooting. They had the daring effrontery to ask him to furnish them with a little gunpowder, as their own was exhausted: nor did they stop here — they even picked up the birds which he shot; and at length marched off in triumph, carrying with them one hundred brace of grouse perhaps, or more. The following story, likewise related in the *Annals of Sporting*, now discontinued, offers an amusing anecdote

of the Yorkshire grouse poacher, where the individual here alluded to might truly in the end sing, "Yorkshire! Yorkshire! but I be Yorkshire too!"—"A short time prior to the commencement of the grousing season, a police-officer from London took up his abode in the neighbourhood of Bowes in Yorkshire, in the character of a sportsman, having several pointers, which he exercised on the moors, as is usual on such occasions. He made it his particular object to become acquainted with the poachers, with whom, by the 12th of August, he was on terms of particular intimacy. It had been agreed between the officer and the poachers that they should shoot together on the 12th, should convey their game to Manchester, and divide the illegitimate fruits of their expedition. When the appointed time arrived, the officer appeared with his arm in a sling, unable, of course, to shoot, but offering the use of his horse and gig to convey the illicit merchandise to its destination. One of the poachers was accordingly dispatched, and was followed by the officer and an assistant. By some means the latter reached the inn at Catterick Bridge before the poacher and the grouse-laden gig, without being aware that they had passed their object; and on inquiring of the landlord, they concluded that he had already arrived, and had retired to bed. Full of this idea, the officer and his assistant betook themselves to comfortable repose, intending to rise before their prospective prisoner, and secure him at the moment of starting. Shortly afterwards, however, the identical poacher did arrive; and having, from some circumstance or other, had his suspicions awakened, he continued his journey, and distanced his pursuers. The latter proceeded to Manchester in time to fix an innkeeper or two with the penalties; but the principal culprit, the main object of their attention, got paid for the game, eluded their pursuit, and took refuge in the bosom of his friends, amidst the lead mines of the north." (Vol. ii. p. 79.)

2595. *Wales presents some grousing country.* The range known as the Black Mountains, which divides the counties of Hereford and Brecknock, affords some tolerably good spots for this sport, particularly near to their junction with Monmouthshire. The Skyrriid Vawr or Holy Mountain, and the Bloreng, used to offer very good grousing, but the approaches to the best grounds are sometimes very difficult to reach, and indeed are only practicable by following the excavations made by mountain torrents, which, forcing their way through the calcareous strata, leave paths by which the hardy and determined sportsman may attain his prey. Having in early life passed some years in Wales, with a maternal relation, we naturally feel pleasure when we meet with any interesting matter connected with this locality, be it of what kind it will. But when it points not only at the picturesque beauties of the country, but also details scenes connected with subjects so much to our taste as grousing, we cannot pass it by without some notice; and the less, as the matter here detailed presents a faithful picture of what is enacted annually on the night previous to the joyous morn which ushers in the lawful attack on the red grouse. Our narrator, it appears, was one of a party destined to meet in the Court-house of the old village of Michael Church, which, those who know it, must be aware is an ancient elevation, raised during the reign of Elizabeth, having the fantastic roof of that period, together with the pointed gables and quaint windows, from which, when a peep could be obtained through the tall trees, not yet stripped of their verdure, might be seen a faint outline of towering Gadda—a vast prominence which even overlooks the Black Mountains. Our sportsman having made his *entrée*, and having been most kindly received into his quarters, and introduced to the party he was to shoot with the next day, he tells us that, sportsmanlike, after a little parley he at length, excited by curiosity, left his company, and stole to the great kitchen, where, as he expected, he met with a group of the subordinate actors engaged for the forthcoming morn. One who enacted the varied parts of gamekeeper on his master's account, and farmer on his own, particularly engaged our traveller's attention. He being questioned as to the prospect for the morrow's sport, replied in the true Welsh accent—"t'will be a famous day, Sir; there be much plenty of birds, and I was never remember them so strong—only one pack of cheepers on the hills." "Pleased with this information," continues our narrator, "but more so with the man, after taking a look out upon the night, which was beautifully clear, carefully putting together my gun, and looking that all the paraphernalia of grousing warfare was ready against the morrow, I retired early, and quietly committed myself to sleep. It had been already arranged that the party should be assembled at breakfast by one o'clock on the following morning; and, that every thing might be 'in keeping' upon the occasion, we were to be awake, not by the ringing of a bell, but the discharge of a double-barrelled gun by the keeper in a walled court behind the house, the reverberations of which proved almost deafening." On hearing this, as may be supposed, our hero sprang up, and was, according to his own statement, the first of the party down; and after having made an excellent breakfast, topped by a little *eau-de-vie*, was soon mounted for the field, and a ride of five miles carried him and his friends to the shooting ground. "Here," he says, "the old hill-keeper, who had so much interested us the evening before, saluted us with 'Good morning, gentlemen! the birds have been crowing for you this long time.' He likewise now became our guide for a considerable distance, sometimes up hills, at others in narrow tracks, which ran diagonally along the sides of these hills, until having reached the summit of the whole, our party were surpris'd to find a broad table-

land as far as the fog permitted them to see. Having held a short but animated conversation whilst loading our guns, &c. we divided into small parties, the direction of our respective ranges being apportioned, and the place fixed where we were to meet after the first beat." (*Sporting Magazine* for August, 1838, p. 311.) Our intention being now fulfilled, which was that of showing some of the difficulties that the ardent grouser must expect to meet with, we stop, not only because our end is gained, but also in justice to the worthy proprietress of the work quoted from: but the reader, in justice to himself, should not stop here; but if at all interested in the subject, should apply to the original, for one of the most descriptive and faithful pictures of grousing at the commencement of the season to be met with.

2596. *Ireland also is a grousing country*, as Mr. Thornhill tells us; and we can bear testimony to the full correctness of his statement. We passed a twelvemonth there; but it being during the Rebellion, we were more engaged in making preparations to shoot the rebel natives than the native grouse; but although we saw very little of this game during our sojourn there, we heard much of it. From Mr. Thornhill we learn, however, that the numbers are few compared with those of England and Scotland; in proof of which he has, he tells us, seen more of them on the mountains about Langholm in Scotland in one day, than ever he saw in Ireland in twenty, although he has been on the best preserved mountains in that country, which belong to the Earl of Kingston; they are on the south side of the great Galty Mountains, near Mitchell's Town, in the counties of Cork, Limerick, and Tipperary, and are allowed to be the best for grousing in Ireland. These large mountains run sixteen miles from east to west, being the property of several noblemen and gentlemen, and are all good for shooting. Lords Massey and Cahir own part of them; but the Honourable Massey Dawson's part, on the north side, is by far the best for grousing. The sporting lodges belonging to him and the Earl of Kingston are worthy of notice, and therefore our informant thinks a description of them will not be unacceptable. "The Earl of Kingston's ground is situated in the centre, and quite enveloped by the Galty Mountains; and at the foot of it a house, named Galtymore; being in the heart of the mountains, it shows that the late Lord Kingston, who built it, was not only a man of great taste, but a great farmer. It lies on the edge of a winding hill, to which there is a fine road, that cost an immense sum of money, as it runs through bogs and morasses. Under the house there is one of the best trout streams in the world; the hills all round are planted with fir, beech, oak, and other trees; and, astonishing to relate, the ground adjoining, which a few years back was but heath, bogs, and rocks, is now as fine meadow ground as any in the low lands. The sportsman is delighted on breaking in on this beautiful and highly cultivated retreat; and the more he views it, the more he is astonished." Mr. Thornhill being, after his fashion, very circumstantial, tells us that he has been at this box with the late Lord Kingston, and while sitting in the parlour, has seen grouse within twenty yards of the window; it then consisted of one large parlour, two bed-rooms, and every other requisite. "As it was intended for shooting parties only, the beds were admirably contrived, as they folded up into large arm-chairs, with covers to them, and had wheels to roll them upon from one room to another; they were very convenient, for often, after too much claret (which was pushed briskly about after the day's sport), the sportsman, if he chose, might sleep in them as they were. These chairs were all run into the rooms at night by each gentleman's servant, and were made up into beds in a few minutes. On the north side, in the beautiful glen of Aherlow, stands Ballinacourty, where almost every kind of game abounds: the fallow deer go at large in great numbers, and red deer, stags, hinds, grouse, hares, and partridges, are in the greatest plenty: there is not a spot in Ireland so remarkable for cock shooting, with the addition of a capital river for both trout and salmon, within a stone's throw of the house: the greatest part of this beautiful glen belongs to the Honourable Massey Dawson. It is in this part of the world that the finest pack of buckhounds in Europe were kept by Lord Massey, who has some of them to this day: but they have much dwindled in their size within these last few years: they were the largest, to appearance, that were ever seen; and to view them, and suppose it would be possible for such brutes to run a deer down, would be almost ridiculous; but the compiler, who was for many years in the habit of hunting with them, can assure his readers that he has been at as severe hunts with them as with his own foxhounds: their noses are so uncommonly fine, that the late Lord Massey used to run a stag for the whole day; and, at the advance of night, has been known to drive a stake into the ground, and draw off the hounds, and coming next morning to the same place, has laid them on, which went off at full cry, and ran into him towards the middle of the day. These dogs, if going at their *top* speed, and in full cry, could be stopped by the sound of the horn, or a crack of the whip, when within hearing of either. The Kerry, Wicklow, Clogheen, Nenagh, and all the north country mountains, have plenty of grouse on them, and are in general well preserved." (P. 85.) Here also we can bear witness to the truth of Mr. Thornhill's report by numerous testimonies, but particularly by an account given us by a sporting gentleman of property of the county of Wicklow, with whom we became acquainted by meeting each other when salmon fishing on the banks of the Boyne. He being, like ourselves, passionately fond of sketching, was warm in his praise of the coast scenery of Wicklow, which he described, in glowing colours, as presenting lofty mountains,

divided by fertile and richly wooded glens, &c. &c. Particularly, he dwelt on the sublimity of the Powerscourt Waterfall (*fig. 407.*), where the vast sheets of descending waters fell from



POWERSCOURT WATERFALL.

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a height of 360 feet, amid hanging hills; and where, in the vast basin below, most excellent trout fishing presented itself; nor was he less eloquent on the mountainous tracts above, where, as he stated, the grouse and woodcock shooting in their seasons afford the sportsman most abundant diversion. Ireland is indeed the country for field sporting of every description; and although we will not say that poaching is not practised there, it certainly is not carried on with the audacity which characterises it in some parts of England. No miners sweep off the grouse by hundreds in a day; nor are there irresistible confederacies formed to destroy all before them. By birthright and by early practice Pat is something of a sportsman, for he is a child of Nature, and every living being is Pat's brother as long as the two think alike; when they differ the chances are, that they go to loggerheads, fight as long as they can, and then shake hands, having thrashed each other

into perfect good fellowship. If Pat were as inclined to listen to reason, as he is determined to have every thing his own way, he would be a very pleasant companion.

2597. *The grouse of England, Wales, and Scotland*, is however vastly superior to that of Ireland, even according to the admission of this gentleman, as well as that of Mr. Thornhill, who says, "The extent of mountains you may range on in Westmoreland, belonging to Lord Lowther, is immense: you can walk for thirty miles without getting off his moors; and often, if you have not a guide, you stand a good chance of not only losing yourself, but remaining on the moors all night. It is, therefore, frequently requisite to have a pocket compass, to enable you to find your way; for although the morning you go out in may be a fine one, yet, in the course of a few hours, you may be enveloped in a fog, and sometimes so suddenly, as not to allow you time to get home before you are lost." (*Shooting Directory*, p. 88.) Mr. Thornhill enlightens us also on the methods of preserving grouse when shot for the table:—"If you wish to send your game to any distance, never draw it, particularly a grouse; that is, do not follow the usual directions of taking out the entrails. The best mode is not to pack them until they are perfectly dry. First of all procure bladders, and put a brace or more in one, if the bladder will contain them; tie the bladder tight round the neck, and seal it with sealing-wax, to prevent the air from getting in; and in that state, if they are put into boxes, they will keep for three weeks, if required. The compiler tried this experiment last year, and found that it answered better than any mode he had ever before made use of: he sent a gentleman some game to London from Cumberland, packed as described; and the gentleman not being at home, it lay in the box until his return, which was fifteen days after its arrival; and this gentleman assured him that he was surprised to find, on eating it, that it was as good as if killed only the day before, and was perfectly sweet, although the distance it went was nearly three hundred miles." (*Ibid.*) Colonel Hawker, if we mistake not, says, "To send grouse any distance, put some pepper to the parts where they have been shot, as well as into their mouths, and then pack them, carefully separated from each other, and kept as air-tight as possible in boxes of hops." (P. 161. 7th ed.) Having made this *détour*, we will now recross the island towards some of those champaign counties where Nature is alternately wild and cultivated, its more barren tracts being the resort of still wilder winged tribes, and particularly of grouse. It is such localities, when strictly preserved, that yield endless stores of amusement to the sportsman, and where alone may yet be found grouse sufficient for most of the English who migrate from the southern parts of our island.

2598. *English shooters in pursuit of grouse*, and not having invitations to any particular grouse grounds, usually direct their course towards some of the northern counties, from Staffordshire to the Tweed, or from Whitby to Whitehaven. In our own shooting days, we well remember that much of the country between Barnard Castle and Appleby was open ground, and was then well stocked with grouse, indeed far more so than at the present time. Not but even then poachers committed devastations; but, in later times, the miners from both the coal and lead mines of Teesdale and Weardale have regularly congregated in great numbers, and for several days before the legal time have destroyed so many as to leave little sport for others. Nor is there, in these lawless times, much reason to expect it will ever be otherwise; on the contrary, eventually, the grouse will be wholly destroyed, as has happened

in other counties, where a lawless population and extensive cultivation have left little room for any other animals than man and his kind. A writer in the *New Sporting Magazine* for September, 1832, informs us, that about three years before the period at which he writes, "he met a body of eighteen upon the moors between Arkindale and Tanhill, to the west of Keeth, who were proceeding as coolly and as carelessly as if each had his certificate in his pocket. They had been in that neighbourhood for two days preceding; and the day after they advanced about ten miles farther south, to the grounds of the Duke of Leeds, and actually besieged his Grace in the house where he was staying, and stipulated for two days' uninterrupted sporting, under a threat of frightening all the birds from the moors should their demand be not complied with." The same writer remarks that, "It is said of late years, since the miners in some parts of Durham and Cumberland have not been fully employed, several of them have received leave of absence from their regular occupation about the commencement of grouse shooting, in order to follow, for two or three weeks, the more profitable trade of poaching. If this be true — and it has been confidently and currently reported, with the name of the manager who indirectly, if not openly, encouraged the men to absent themselves — gentlemen who own or rent those moors, and who expend considerable sums in the preservation of the game, should make representation to the owners of the mines of the shameful conduct of their agents, who thus lend themselves to the demoralisation of the workmen." (*Ibid.* p. 347.) It is much the same also in other northern localities, from Staffordshire to the Tweed, and from Whithy to Whitehaven. Some years ago much open ground was to be found in this extensive sweep, and much good shooting likewise. Stainmore is a vast tract, much of which belonged to Lord Thanet, an amiable nobleman, who, preferring friends to foes, was by no means strict. The intervening portions also of this extensive range are many of them accessible by application to the principal owners, consequently vast numbers of sportsmen resort to the circumjacent towns and villages, among which Bowes was then considered as a principal head-quarter. In this extensive beat likewise, we may observe, for the benefit of the wearied, the lame, and the lazy, that much of the ground can be ridden over, which, to the aforesaid, is an important feature in the prospect. Kirby Lonsdale, Brough, Bowes, Sedburgh, Kirkby Stephen, and the Old Spittal, are also sporting locations for the grouse to domesticate themselves in. Proceeding northwards, many excellent preserves still present themselves, a few only of which are open ground; but a suitable introduction will, in most instances, insure the applicant one, two, or more days' shooting, according to circumstances. As this locality has so long continued a favourite resort of grouse devotees, we would recommend to those interested in the matter, a reference to the sporting periodicals for more full and authentic information than our limits will allow us to give. In the *Old Sporting Magazine* are some amusing accounts of the perils, the toils, and the delights, which have been experienced in this northern tour. Nor is the *New Sporting Magazine* behind its competitor in the entertainment and instruction which it offers on the same head, as will be seen by a reference to No. xvii. where the reader will find seven pages well worthy his attention, if he has any inclination to grouse travel. One piece of information it gives, which will be peculiarly interesting to many: — "In the immediate neighbourhood of Bowes, the privilege of shooting over the common there has been let for these three or four last years to fifty subscribers at 10*l.* each." On this spot, in 1829, the same informant tells us, a gentleman, after three almost blank days, bagged eighteen brace on the fourth; which fact every young grouse shooter should keep in mind, which will prevent him making up his mind as to his probability of success from the first, or even the second, day's shooting.

2599. *Hexham in Northumberland* is a large town, watered by the noble river Tyne, and is surrounded by grouse grounds that are tolerably productive; at least they were so when we resided there. Leaving this, and stretching westward towards Cumberland, and crossing into Durham, we find moors that are in the hands of different proprietors, among whom we may notice the bishop, Dean and Chapter of Durham, Mr. Beaumont, &c. &c. These grounds, as far as our experience goes, vary; and generally they are well preserved. Mr. Holland, the gunmaker of London, rents some of the Dean and Chapter of Durham, over which shooting is let by ticket (1857). As it was only on two occasions that chance led us in this direction, and at which times our stay was confined to two or three days only, we do not pretend to give any correct account of the actual state of grouse here; but should any further information be sought for as regards these particular localities, we would recommend the reader to a very excellent, and, as we believe, authentic account in the *New Sporting Magazine*, vol. ii. p. 99., which is rendered further interesting by the history of a self-devoted hermit, who resided, or rather vegetated, in an excavation (for it can hardly be called a hovel), not far from the road-side leading to Edmonbyers.

2600. *Scotland as a grouse locality.* — There is no question about the super-excellence of Scotland over every other part of Great Britain for the breeding and rearing of grouse. In the Highlands the lairds let their hills for grouse shooting; and such is the rage for this sport, that they are enabled to exact from sportsmen very considerable sums for shooting quarters, particularly from the more monied Southerners. Railways, and the example of the

Prince Consort, with specious advertisements in the newspapers, have drawn many down who have paid very dearly for their whistles, and if the owners wish to maintain their rents they must keep their grounds better stocked with game than many of them have been of late years. Their shepherds should be strictly cautioned to prevent, as much as lies in their power, the sheep from treading on the eggs, which they are apt to do when in their browsings they dislodge the old birds when close sitting, which, though it is not very easy to do, so bent are they on incubation, yet we do know it is done. They must, above all, strictly enjoin each shepherd, under penalty of losing his situation, that he back-break his dog. By back-break (a term we learned from an old shepherd favourable to grouse), we mean, to teach them never to worry the cheepers, which they are too apt to do, and having caught one, a slight but fatal gripe is given, and the dog sets off to serve others of the brood in the same way. The poults can take care of themselves. We should say to the mountain lairds, be assured that large sheep flocks and well-stocked parks of grouse are never likely to exist together, but more from the disturbance of the shepherd than the sheep. For several seasons past we have met with zealots in grouse shooting, who have relinquished the Highland hired shooting for these reasons, because the landlords did little to preserve their grouse, and therefore they would do nothing further to line their pockets. The small farmers, likewise, should protect the grouse, individually and generally, and not shoot them in masses, by raking them with a long heavy gun as they sit on their hills, or cluster among the corn stooks.

2601. *Now that steam has annihilated distance*, and a sportsman can breakfast in London and dine in Edinburgh, a moor or a share in a moor or forest in the Highlands has become a sort of fashionable necessity, which the development of Scotch railways further fosters. Steamers, too, aid the progress of those who are nautically inclined, and coaches further assist the inland route. Here nature is found in her wildest, grandest form, and the feathered tribe, and fishes also, in the greatest perfection. Ptarmigan, grouse, black game, white hares, and other wild animals rare to Englishmen, are to be met with, and accommodation and facilities of communication are improving every year. In Cromartie, both red and black grouse are to be met with in plenty. Here, should any circumstance deprive the traveller of grouse sport, he may still amuse himself by shooting the rock pigeons which abound among the crags. Summer birds also of other descriptions will offer themselves to his notice; even the eagle will occasionally present himself, and the falcon of true nobility may be seen bearing away his prey to his young: nor will the Alpine hare refuse to cross his path, with other northern animals of various kinds. Still let not ingenuous youth embark in any Scotch ventures without due caution and inquiry. Neither let him embark in the more limited risk of a season ticket on a moor, the capabilities of which he is unacquainted with.

2602. *We would recommend the novice never to visit any extensive moors* for the purpose of grouse shooting without a companion, or a guide who perfectly understands the nature of the locality to be visited, and the required preparations to be made for it, in the way of dogs, guns, ammunition, and personal appointments, &c. &c. One who does not do thus, often meets with many mortifications and disappointments in his high-raised expectations. We have heard of one who, by some recommendation, having determined to fix his shooting quarters at a village in the precincts of the grouse grounds of the Bishop of Durham, was joined by another grouser, equally experienced and intelligent. The following memorandum of the united efforts of both, as we suppose, was found on the return:—"Retired to rest at eight in the evening, rose at half-past twelve, and having breakfasted, set off by starlight to our grounds; but, as when we arrived there it was still starlight, we sat down on the heather, flattering ourselves that as soon as it was light, our strength being recruited, we should be the better prepared for the work of destruction we contemplated. A dense fog, however, succeeded the dawn, which hid every object from our sight, although our ears were tantalised not only with the chattering of the birds, but with the sound also of many shooters in pursuit of them on the other side of the mountain, less obscured by fog. Their guns, as we distinctly heard, were in full practice; but we knew too little of the country, and were too tired, to follow them; so we returned to our quarters, purchased a few young grouse (poults we suppose) at a great price, packed up our traps, sent away Ponto by the waggon, and took ourselves off by the coach,—*risum teneatis amici*." In the detail of red grouse, black grouse, and ptarmigan shooting, which follows, the reader will be presented with many pictures, which bring him into more minute acquaintance with this romantic district. Here Nature appears to wear her sternest features, yet here the sportsman revels in the joys of the chase; for here the lofty precipices swarm with ptarmigan, whose snowy pinions rival the snow itself. A little lower down, on the same mountain, he meets with the blackcock; and, if very far north, he may see the red-deer stalked, and the roebuck pursued. The eagle and the hawk will hover around him; and, if he be fond of the sublime, he may here indulge himself in viewing Nature in her wildest dress, and look with veneration on that Providence who has given even to these regions charms sufficient to call the southron from his home to visit them.

SUBJECT. 2. *Red Grouse Shooting.*

2603. *Red grouse shooting* (fig. 408.) is one of the highest marks of the sportsman's ambition; and as by law as well as custom he can follow the red grouse some days before

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RED GROUSE SHOOTING.

he can attack the black grouse, we will accompany him, in our mind's eye at least, to scenes we have often witnessed, and over spots where our memory delights to dwell. We will suppose our sportsman, even if it be his first trip to the moors, to have taken care to be well provided with all the materials necessary for the war he is going to carry on against the winged tribes. His guns will have been his first consideration; we say guns, for we have seen more than one instance where the sportsman's joys have been seriously interrupted by the breaking of the stock in a fall; the fracture of a spring now and then occurs; and it has happened that a barrel has burst; which misfortunes can be best guarded against by carrying two guns; and, we would say, take a double and a single one. We indeed, as a prudent precaution, say, take duplicates of all your materials, particularly if you are going to cross the border, where the distance to resupply yourself may take some days ere such supply can reach you. It is not every shooting ground that can be ridden over; indeed, the average is against it in point of number, and still more in point of safety. We rented some grouse grounds near Brough in Westmoreland, the ascents to some of which were so precipitous, that we could only make our way up the gullies and watercourses for more than three miles to our point. As we were too enthusiastic in the sport, particularly in the first part of the season, not to be every day engaged in it, we employed a mule in carrying us up to our ground; and the same plan we would strongly recommend to other sportsmen thus situated; for mules, it is well known, are hardy and remarkably safe. Our dogs we sent onwards even before it was light, without any other breakfast than half a pint of thick water-gruel, they having had a substantial meat supper the evening before. Some flesh pellets and oaten cakes were also taken by our attendant, for their occasional refreshment on the ground; for unless you have a relay of dogs to divide into the morning and afternoon shooting, you must husband the strength of the brace or leash you hunt. When three dogs were employed, our attendant used to take one up, while we ranged with two, which are amply sufficient for any two or three gunners; and not more than that number should be on one beat. Be it remembered by the sportsman shooting on open ground, or moors much frequented, that unpleasant collision in beating can hardly be avoided, as we have often experienced; and nothing but inherent good feeling and true politeness can smooth down the irritability, and sometimes the consequences likewise, engendered thereby. It was to steer clear of these disagreeables that we, in most cases after our first grouse excursion, either begged liberty to shoot, or hired ground for it, purposely that we might enjoy our sport without the interruption of strangers.

2604. *On the subject of the dogs used in grouse, Mr. Lascelles, an ingenious writer and an excellent sportsman, personally known to us, and known also to others by his Familiar Letters on Sporting, which work, although it was cut short by untoward circumstances, yet, as far as it went, was highly creditable to him as a writer; and had it been continued throughout, would have established his credit as an author, as well as somewhat remunerated him by its returns. This gentleman, a downright zealot in grouse, was a very good judge of sporting dogs; and, when we knew him, he possessed some very crack English pointers, which we are not surprised that he should use on the moors: but it does somewhat surprise us, that he should have, in his grouse tour, become so enamoured of some Russian pointers he met with, which he tells us he considered as the most excellent grouse dogs he had ever seen. As his account of these dogs, and his opinions of their qualities, do not tally either with our own or that of others, we offer what he says on them to the reader's notice. Mr. Lascelles, we believe, almost every season made some sporting engagements on an extensive scale. It was on an occasion of this kind, when taking possession of the grouse quarters which himself and friends had just entered on,*

that the scenes and matter which follows arose : — “ We are situated,” he says in a letter to a friend, “ in the very heart of good shooting, and within twenty yards of the door may be found nearly as many broods of moor game. From the elevated position of our quarters, we have an almost uninterrupted view on every side, over ten miles of country ; so that no poacher, or other unlicensed intruder, can possibly trespass unobserved, as, by the assistance of a good glass, we can at any time make the discovery. We have two regular keepers and four under ones, and I believe they are all as honest as circumstances will admit of ; the two former live in the house, and are each of them mechanics enough to repair a gun in case of necessity ; for this purpose they have a small forge, with the usual apparatus adjoining. The four under-keepers live at some distance, and in opposite directions, and come every morning to attend us for the day ; in the evening, after shooting, they return ; and by this means we have always a person on the look-out for the detection of marauders. On three sides of ours, the neighbouring manors are carefully protected ; but that on the fourth is an open one, which of course necessarily requires more immediate attention ; for this purpose one of the head-keepers always accompanies the party who shoots in that quarter, that, in case of necessity, his authority may be more immediately applied ; the other remains at home to attend to the dogs, which are also left there, and have the food and every thing else ready for the reception of the others which are at work. In our way here, we stopped one night at —, and as our landlord was something of a sportsman, he thought it necessary, I suppose, considering the quality of his guests, to dilate more than usual upon his favourite topic. There is generally one inconvenience attending a conversation of this kind, that, as you perhaps pay very little attention to what is said, you give a person every cause to believe that all he advances is perfectly consistent with reason and rule, till he feels so certain of the infallibility of his own doctrine, as to oblige you, probably much against your real inclination, to become a subscribing witness to his maxims. It was thus in the present instance ; for, after running on an hour, without a single interruption, about the excellence of his pointers and spaniels, we at length agreed, *carpere viam*, to attend him with the former on the following morning. It was seven when we started, and the distance to the nearest good moors at least eight miles ; so that the sun had risen considerably in his orbit, and made our host appear much warmer in the cause than he had originally intended. I own I had little hopes of being gratified, for the dogs were all of the Russian breed, and with coats longer than any I had seen ; their condition was also much against them, considering the heat of the weather. But experience is the best proof of excellence, and I was not only agreeably but gladly surprised, for I immediately purchased a brace : they are perfectly steady, with good noses, and high rangers, and feel less inclined for water than any smooth pointer I have. It seems a very erroneous idea, and it is one also which gains daily belief, that this dog should suffer more from heat than our native breed, merely because the opinion is warranted by appearance. The effects of constitution are here very strikingly displayed ; the cold and warmth of Russia are equally oppressive ; and Nature has, with a munificence truly wonderful, given to the most humble of her creatures the rare power of sustaining the severity of the one, without, in any material degree, suffering from the laxative effects of the other. It is on this account that emigration has so little effect upon the good qualities of a Russian pointer ; for probably, whilst another dog would sink beneath the influence and change of climate, he rises superior to restraint, and braves, with equal indifference, the snows of Zembla and the balmy zephyrs of Peru. I must however, notwithstanding all these rare qualifications, still incline to my favourite breed ; and only in the absence of my two rivals, Flirt and Fop, already spoken of, would I be merely content with the services of Bumper and Bacchus. Names more decidedly appropriate to the calling of our host could not have been imagined ; and it was, perhaps, a fortunate circumstance for us, that he had not better consulted *the honour* of his deity. In one instance these dogs bear some resemblance to the Spanish breed, being able to hunt without water ; but in others, particularly voracity of appetite, they widely differ. A friend of mine, a great sportsman, who possesses a real Don, has been kind enough to give me a description of his properties, which for your satisfaction I will now transmit to you. His remarks, you will perceive, are dictated partly by the object of my question, viz. What resemblance he bore to Woollett’s celebrated engraving of the same species of animal ? — ‘ In his colour,’ continues Mr. Lascelles to his friend, ‘ he is spotted, as you have seen Danes, with this difference, that where their spots are black, his are similar to those of a tortoise-shell cat : on his body they are of various sizes, but on his head very small and numerous, the ground of all being white. His nose not black, but of a flesh-colour ; his skin delicate and very soft to the touch, more resembling very fine wool than hair, and probably the result of a warmer climate ; his stern not quite so fine, as if he possessed some distant cross of a setter. His head by no means resembles the general idea of a Spanish pointer, heavy, like a bloodhound, but is particularly light and fine, showing all the breeding possible, especially in his ears. In height he stands twenty-two inches ; from the nose to the end of the stern, which I think has been shortened, three feet three inches, and from that point also to the setting on of the latter, two feet two inches ; thus you will

perceive that he is rather a small dog than otherwise, without the least lumber; he has excellent bone, with round, even, and sound feet. I do not recollect him ever foot-sore. His shoulders are somewhat faulty, being too upright, and he appears in consequence to gallop rather wide before; but I have observed him to hunt longer, and bear more fatigue, than any dog that I have been in the practice of hunting with him, never having been deprived of his services, after once broken to the gun, for a single day, frequently riding, at no easy pace, six miles to my ground, and this in September, for several days together; indeed, I never fancied sport without Madrid. His pace, which is fast, he seldom varies; and he is always at work, carrying his head in one position, lofty; his action when pointing is perfectly upright; his stern straight and extended, and his head a little higher than when ranging; he never raises a foot, nor in any degree approaches the ground with his body; this attitude, which is altogether handsome, I do not recollect him ever deviating from. His nose is certainly superior to that of any other dog in my possession, and still more so in warm weather; but where I find him most useful is, in his being able to hunt without water, which he will do through the hottest day. He was never on the moors; but, from his preferring rather a wide range, and being an excellent footer, I think he would be serviceable. I one day last summer shot four couples and a half of young wild ducks to him, all of whom he pointed. I believe he stood at the first bird he found, but from the violence of his temper he was difficult to reduce to order, always flying at the face of the person correcting him; but, when once shot over, gave no further trouble: he is still savage towards strangers and other dogs, and a most voracious feeder, being seldom satisfied: I have occasionally fed him on potatoes only. It is difficult what answer to give respecting his offspring, as much depending upon the one side as the other: two of my own, however, which I shot over the last season, have fully answered my expectations, as I understand has been the case with another which I gave away; these are all which have been tried. They exceed their sire in size, but nearly resemble him in colour. I had one very curious (dead) black, blue, and white. I have one now brown, white, and black, and another blue and black. My brother, who brought him from Gibraltar, said his breed was considered scarce, and that it was called the Regent's breed, bespeaking more perhaps the Portuguese than the Spaniard. Such," says Mr. Lascelles, "is a description of the Spanish pointer of the present day; and I have no doubt but the breed may be considerably improved by skilfully crossing it with our own."

2605. *The two greatest defects of the Spanish pointer* are a savage temper and an enormous appetite; climate may correct the one, but nothing, except the most judicious attention, can finally diminish the other. A little onwards Mr. Lascelles writes, "We have been here five days, and (four of us) in that time have killed one hundred and eighty-five brace." What follows is so practically useful, particularly as regards breaking dogs to the moors, that, coming from a source we have much confidence in, we shall stand excused by the reader, and by the author also we trust, for introducing it; and the more, as no hope exists that he will resume his labours. "An English atmosphere," he observes, "is generally much more favourable to this diversion than a Highland one, as, from the innumerable lochs and the immediate vicinity of the ocean, the mountains are so concealed in the vapours arising from them, as at all times to render a day's sport extremely precarious. A very little wet soon causes a grouse to become wild and unassailable, and the chance of pursuing him to any advantage is very uncertain, until perhaps in the middle of the day, when the sun may establish a temporary influence. His habits are exceedingly regular, always taking his food and water at particular times, the latter at noon: he will then retire to the sunny side of some bank, and beneath the cover of high furze, bask in all the delight of imagined security. If a good shot suddenly come upon a brood in this situation, he may very frequently annihilate the whole, for they will immediately separate in different directions, and each bird get up singly, so that he has nothing to do but restrain the ardour of his dogs, and, in some measure also, that of himself. The impetuosity with which many sportsmen, and young ones in particular, travel over their ground, is one great reason why they meet with so little game: they no sooner find a brood, and gain one shot, than they give up every idea of further pursuit, without ever marking the progress of their flight, or that of an individual, which may perhaps be induced to shorten or vary his from the infliction of a wound. From the circumstance of heath presenting so continued and smooth a surface, and the little variation in every object upon it, it is more difficult to mark down a grouse with certainty than a partridge; but by following the course of him carefully with your eye, and afterwards trying in that direction, you will seldom fail of gaining his retreat. It should be a maxim with all sportsmen, never to leave a yard of ground untried which is likely to harbour a bird; by this means you will sooner learn the nature of game of all descriptions, teach your dogs a better system of duty, and give yourself a very decided advantage, indeed, over every other person who pursues a different method. According also to the number of dogs you hunt, at the same time will be your chance of sport: where you possess such a latitude of range, a greater scope is open to your exertions, and as the fatigue of moor shooting is much more severe than that of any other

amusement, you should endeavour by every means to reduce its effects. Two brace of good steady dogs are, in my opinion, the number best calculated for this purpose; and they will work as long as any gentleman ought to continue out. The plan which many sportsmen adopt, is to shoot with one brace of pointers till the time of lunch, and then take a brace of fresh ones for a couple of hours in the afternoon, working the four alternately, morning and evening. The method suits very well with such a system, but there are few men who feel inclined to renew their endeavours after a cool and comfortable repast; and a good fire then becomes a luxury, which we are seldom willing to make so immediate and voluntary a resignation of. Provided every dog be tolerably steady, you can, if you like, hunt several together; but where there is a want of discipline, or where it is totally disregarded, it would be absolute folly to use more than one. The opinion which is held by many, of the advantage attending a dog's running up to his game, appears to me a strange subversion of every principle of profit or satisfaction; it totally ruins that cool and even conduct which should characterise a good shot, and excites a contention, generally terminating in mutual discontent. The danger also is in many respects not the least objectionable feature; for, in the anxiety of the moment, you may forget to uncock the second barrel; and, should you stumble, which is by no means an improbability, its contents may be lodged in the first object that unfortunately intervenes. I have known an instance also where, in the struggle for possession, the thumb of the sportsman had nearly been sacrificed to the consequence of disappointment in his dog.

2606. "*There is yet another objection to this mode of breaking, which is perhaps still more serious, and that is the alarm that is given, not only to a single bird, but frequently to a whole brood or covey, which instantly take wing and deprive you of the chance of retarding their flight.* I had a dog once sent me which had been broken according to this system, and as there is something rather extraordinary in the mode I pursued to teach him better manners, I will relate it:—He had been shot over two seasons, was particularly handsome and well bred, with one of the finest noses I ever knew, and as fleet as a foxhound. In the morning, when I first had him, which was in September, I took him out alone, and had the good fortune, for it was a very scarce country indeed for game, to find a covey almost immediately; he pointed a moment, and then ran in, but the birds separated, and the first I afterwards shot at fell within thirty yards, on the opposite side of a wall. I was, perhaps, long in getting over, for when I did, Beau had not only swallowed the bird, but the feathers also. To begin a new system of discipline would, I thought, then be premature, as we were scarcely acquainted, and I had the rest of the birds all marked down. I got five more single shots, and killed four, luckily in ground where we were upon more equal terms; the fifth, which went away wounded, he followed with all the impetuosity of unrestricted desire, and actually took a gate flying, and gave tongue like a spaniel; in truth, I never in my life saw more determined lewdness. At that moment I was very much in want of a pointer, or I should not, most likely, have taken the pains with him I did: for the remainder of the month, and the whole of October, I took him out at least five days in every week, with one single steady old bitch, that would do any thing I bade her: he never was in the least degree tired or distressed: no country was too dry for him, nor any covert too strong; and he gave such decided proofs of natural excellence, that I used every endeavour to restore its lustre. I began with severe measures, for he was grown too old in iniquity to hope any success from mild treatment. I tried excessive flogging for a fortnight, but that had no effect whatever: in addition to this, I made use of a long trash, which a boy laid hold of whenever I fired, and who not only checked his impetuosity, but corrected him well at the same time for displaying it: so long as he was under this immediate restraint, he was more cautious of offending, but from the instant it ceased he resumed his former habits. I next tried a very sharp-spiked collar with the cord attached to it; and to have him at all times within reach, I loaded him with shot, by hanging about two pounds around his neck, so that he might be said to be in a constant state of coercion: finding, however, that all this was mere trifling, and that, after reducing the length of the cord to about two yards, and fastening the end to the middle of a good strong hazel, which had the effect, at any extraordinary or improper exertion, of pulling him completely over, I had not the most distant prospect of remuneration, I was at the point of yielding to necessity, when a circumstance happened which gave me an opportunity, once more, of trying how far this insubordinate spirit might be reduced: the old bitch began to show symptoms of approaching desire, and, during the period of their amour, I allowed him a perpetual and unlimited intercourse with her, keeping him, at the same time, low in flesh, and taking them both out together as usual. In the course of a couple of days I found so decided a change for the better, that I persevered more diligently in the plan of reduction, which, at the end of a fortnight had so completely succeeded, as to leave me in possession of an animal which, of his kind, was the very best I ever saw: the produce also of that litter were invaluable, and required less breaking than any dogs I ever was master of." (*Letters on Shooting*, let. v.)

2607. *Mr. Daniel is in favour of the setter for grouse shooting; and though, according to the*

nature of fashion, his writings having been long before the public, they cease to create the interest and attention they merit, yet we shall not hesitate to present our readers with some of his practical remarks on our subject. He was a sportsman of no ordinary stamp, and if only a few of the good things, which have been showered on the unworthy, had descended on him, he need not have pined out his latter years in a prison. We knew him in his palmy days when he was an Essex neighbour, and a more hospitable entertainer, a more kind-hearted and friendly acquaintance, it would have been difficult to find. He was an enthusiast in all sporting matters; his dogs were better than those of most around him — his spaniels particularly (as we have elsewhere observed) were super-excellent, and were sold at enormous prices. But we must not linger, although the subject even yet interests us, as it must every one who knew him. "In shooting the red grouse," he observes, "the old English spaniel, or setter, is preferred to the smooth pointer; they have better noses, and their feet are defended by their long hair from the ling, which, in dry weather, cuts like wire; they also are, for the most part, higher mettled, and hunt with more courage: the only objection to their general use is, that they require such plenty of water, and without which their speed and steadiness are frequently called in question. Upon the moors there is seldom a want of this article, and they there undoubtedly show themselves superior to the pointer. Upon the hills, where a horse can travel, grouse shooting is a noble diversion: to be undertaken otherwise, demands constant and hard labour; for the shooter is, during the course of the day, ascending, that is, if he finds a brood on the top of one eminence, they will sweep over the valley until they reach the summit of another, up which the sportsman has to climb. In pursuing these birds, when the dog stands, should the grouse erect their heads and run, it is a sign, either from wet or some other cause, that they will not lie well that day, and the sportsman has small chance of getting a shot but by running and heading them. The grouse soon become putrid; they should, when shot, be immediately drawn very clean, and stuffed with heather: should the plumage be bitten, or torn by the dogs, it must be wiped as dry as possible when put into the game bag; and before packing, to be forwarded to any distance, they should be again wiped, and laid within the moderate heat of the fire, to render them more perfectly dry. To show the abundance in 1801, a gentleman in Invernesshire shot fifty-two brace of moor game in one day, never killing a bird sitting, or more than one bird at a time." Mr. Daniel, in his researches, notices a fact which is not much in favour of the good taste of the epicures of former days. His words are, "Neither this nor the blackcock was at the famed feast of Archbishop Nevil, which is somewhat surprising, especially as both were found in Yorkshire: perhaps they were unaccustomed to the taste of them, or did not in those days consider them a dainty: they are now highly esteemed, and are sent as presents to the south, both fresh and potted. The expedition of the mail coaches has, at least, enabled the Londoners to receive their moor game sweeter than formerly: and the best mode of packing is to put them in boxes, with partitions; a single bird, or at most a brace, in each partition." (*Rural Sports*, vol. iii. p. 309.) We fear we have dwelt too long on this attractive variety of sporting; neither should we have borrowed so much from other sources, had it not been that, although we have seen much grousing practice, yet we are fully aware that there are others who have seen much more; consequently, for our reader's sake, we, to make our subject as practically useful and as generally descriptive as possible, have thus sought for assistance from other writers; indeed, from all that have presented themselves of known authority. We shall now, however, offer some further remarks, selected from notes of our own on the subject, made several years ago, when we sported widely and continuously.

2608. *In shooting of red grouse* it is well to consider their numbers and their state, as regards size, &c. which is greatly dependent on the nature of the season. A wet and cold one retards the pairing, and is also unfavourable to the hatching of the broods, which, like our domestic poultry, under favourable circumstances run merrily about as soon as they emerge from the shell, and then assume the name of *cheepers*, which as they advance in growth they change for that of *poult*s. As to their habits we have usually found them, morning and evening, on their feeding grounds; after which, having satisfied themselves, we have commonly observed that they take a flight, and then settle down on some favourite spot, if fine, for basking; if otherwise, they will drop where overhanging banks or sheltering ling will protect them. Such a spot, if suddenly approached up wind, often occasions an immediate dispersion of them, and of course a favourable opportunity for a successful shot. The sportsman who first enters the grousing field should do it with hope of success, but not with too sanguine an expectation of it, so many are the circumstances that may intervene to mar his hopes. Fogs and rain are among those most likely to occur: being either too early or too late in the field are likewise drawbacks on the certainty of sport. If too early the mist obscures the sight; if too late, others, having been before him, have killed some and disturbed the rest, and the only chance left is to determine whether the flight they took was one mile or only half a one, and whether there is not an awkward ravine between him and them. Happy it is for him, in such case, if he be a lover of Nature, for then the wide expanse above him, the rolling of portentous clouds, or the struggles

between the sun and the mist for precedence, are objects of pleasing reflection. We have often found sufficient pleasure in these prospects, and the mental associations resulting therefrom. We indeed lived in the vicinity, and when the morning was inauspicious, we solaced ourselves with the hope that the next might be better. But to come two or three hundred miles to meet nothing but disappointment, is any thing but pleasant. Nevertheless, brother sportsman, see the clouds break, a slight breeze is springing up: rest you awhile; and, if you can wait until the afternoon, the birds will be on the feed, and your sport certain. But do not leave the ground, otherwise it will be soon occupied by others, which will insure to them the advantage that at present awaits you. A true grouser will never give a chance away; and if he leave his ground without actual necessity, he speaks disappointment. On the contrary, if you stay quiet a while in some sheltered spot, your dogs will be fresh, your own sinews not unstrung, and your strength undiminished.

2609. *When unaccompanied, and new to the locality*, which way you shall direct your course will perhaps be your consideration on taking your ground. We say, unless you have a great many hours before you, do not extend your stretch too far, but rather try your ground, if likely, over and over again; for should the grouse take wing out of bounds, they seldom fly so much as half a mile, particularly if there be inequalities in the ground, but will drop probably on the first slope. Beat your ground therefore well, and, if there be any wind, try the lee side of the slope with every hope of success, and do not forget, that where the ling is strong, particularly if the bottom is mossy, a grouse that has been disturbed in the fore part of the day will lie very close there, although at other times they do not affect this kind of cover. Wherever the berries of the ling are prominent, the birds will be likely to be found. On some days every sportsman knows that grouse of each kind are more inclined to lie than at others; and, without any manifest difference of circumstances, the next day perhaps not a bird will lie to your dog. When they will not, but run immediately, it is recommended, that, leaving the dog on the point, if he be steady and obedient, you make your way round and head the birds; and, provided two persons are out, who are accustomed to each other's shooting, they by this method, may get some excellent sport, and by this unexpected manœuvre may enthrall a brace or two. It avails little to beat the moors in the middle of the day, particularly if the sun be strong; the enthusiastic sportsman will however sometimes risk the chance, and now and then succeeds; and when heavy mists have curled around during all the early hours, there is little time left but the middle of the day. As a general rule, however, during what is considered the grouse season, which with some ends in October, and with others continues much later, the sportsman will do well to take his chance of success, in these respects, wherever and whenever he can. When grouse have fed heartily, they usually take flight to some favourite haunt, which the sportsman of the neighbourhood, who follows them continually, is well apprised of, and profits by it. These retreats are either hollows, sheltered by overhanging banks, or knolls, directly open to the solar rays. Here they appear to be either sleeping or preening their feathers, and, if the ground be dry, scratching and rubbing themselves in the loose earth or sand. At such times they may be often surprised by chance, for it is no less true than strange, that the dogs will hardly scent them, particularly if what little wind is stirring be directed from the dogs, and not towards them. We have many times observed this inaptitude to give off the particles of scent at these particular times, as though it were an ordination of Nature to prevent their being surprised by foxes, stoats, &c.

2610. *The time of the year has much influence on the habits of grouse*; in frosty weather the shooting of them is often very good, as they appear benumbed. Wet and windy weather in the cold months makes the sport very slow, and indeed it will be altogether useless to try high grounds, for they now seek sheltered situations at the bottom of the hills, and the lee side of prominences. It is, however, well to remark, that it is equally necessary even now that you carry hope in your bosom, and determination on your brow; and as we have often experienced, when we least expected it, we have found a pack huddled together, that yielded remuneration to each barrel. When you are unaccompanied by any other sportsman, and it is towards the end of the season, take a handy boy with you. We did so, and found our advantage in it. As soon as we perceived the dog or dogs feathering in a likely situation, and had reason to expect not only from the locality, but more particularly from the nature of the weather as being unsettled, that they would not lie, we used to send the boy round with one of our dogs in hand, directing him to walk carelessly, as though he was doing any thing rather than hunting. This ruse frequently disarmed the birds of all caution, and we were left to take our choice, by leading up to the birds, which, so soon as they discovered they were outflanked, almost invariably rose and towered, offering an excellent mark for both barrels as they wheeled round, and frequently they fell not singly but doubly, as they crossed each other. It is only the zealot in sporting that will continue his shooting throughout November and December, although very good sport may be obtained in those months. It is true that both red and black game are then wild, but when provisions become scarce and frosts nip the energies, they approach the lower and more sheltered grounds; and even, as we have already noticed, may be seen in the fields of

the Scotch farmers. In deep snows they draw still nearer to the houses and yards of the husbandmen, and have been seen ranged in numbers along the stone walls which surround the dwellings, &c. of the Alpine farmers. It is now that they get raked fore and aft, and were it not that the black game are especially preserved by law from slaughter after a more early time than is allowed to red grouse shooting, they would be annihilated.

2611. *The flight of a grouse* renders it not quite so easy a mark as some suppose, for it occasionally rises almost perpendicularly, and then directs its course straight forwards at an elevation of from ten to twenty yards. When it makes the turn onwards, it may be pulled down with considerable ease; but it must be done as pence are hit by the gunner, at the moment of the pause from the perpendicular to the rectilinear. Some shots are particularly dexterous at the skimming grouse, and others again very seldom hit them, from flurry, at the change of position. Both red grouse and black game, when they have bred freely, begin to congregate, when the poulters are strong towards the end of October or the beginning of November. When this occurs in a plentiful country for them, they collect in large masses of a hundred or more, in which case they are with difficulty reached, having sentinels posted, and are not to be neared within a hundred and fifty yards. In the dead of the winter, on the contrary, when from extreme cold and scarcity of provision they approach the habitation of man, they are all then as tame as they were before shy.

2612. *Colonel Hawker is very trite and short in all his instructions on shooting*; sometimes, as we and others think, he is too much so, considering the value and the source they spring from. We have covered several pages with hints or small shot, for we will not call them by any other name, being in company with those of this great gun, who, with one fire of sixteen grape shot,—we beg pardon, reader, you would call them lines (and very emphatic ones they are), thus describes the practice of grousing:—“For shooting grouse select a fine sunshiny day, from about eight till five in August or September, and from about eleven till three at the later periods of the season, as they are then extremely wild, and will only lie tolerably during the few hours which are favoured by a warm sun. Unless the weather is very fine, you will see them running and getting up five hundred yards before you. In this case, let one person take an immense circle, so as to head them; while the other remains behind, to press them forward when he is ready; and, above all things, you should, for killing them at this time of the year, use either No. 1, 2, or 3, shot, in the largest single gun that you can possibly manage; or, what is better, a good stout double gun loaded with Ely's cartridges. Grouse take a harder blow than partridges, and do not fly quite so regular and steady.” (P. 160.) We cannot conclude our practice of grouse shooting, without a hint to the sportsman, that this delectable amusement may be extended to the latest months of the year, when, if the birds are become less numerous, they nevertheless lie much better, unless they have had no respite, which seldom happens; for the keen edge of the generality of sportsmen who visit the moors wears down as the birds become scarce, the moors wet, and particularly when other objects, as pheasants and woodcocks, engage their attention. It is now that the resident sportsman may take his walk undisturbed. Mr. Lascelles has some thing so much to this point that we cannot refrain from introducing it:—“In October the weather, though generally in this country (the northern moors) fine and open, is yet not so oppressively hot as in the two preceding months; the autumnal breezes impart their invigorating assistance, and give a new life to every object around: the earth retains a greater portion of refreshing dew, and no longer presents an obstinate and unprofitable surface: all game are then on the move, and we are no longer obliged to search for them in places as impenetrable to the sportsman as the overpowering heat from which they have escaped. Grouse, partridge, pheasant, hare, nothing comes amiss, and all are attainable: for the first mentioned bird, if he has not been disturbed since August, will now lie as well on a fine day as he would at the commencement of the season; and, in point of excellence, there is no comparison. The common weight is about twenty-three ounces, though I have killed them as high as twenty-six; and I know an instance of one being shot in Yorkshire, which, even after it had travelled to London in the hottest weather imaginable, weighed thirty ounces. They continue to increase in size and fullness of feather until November; and then, in my opinion, have a nobler appearance than any other description of game whatever: to pursue them, however, with any chance of success so late in the season, your method must be entirely altered, and you cannot go about it too quietly. A good stout barrelled gun, that carries a large charge, and one steady old dog, will be the most effective; and to have a still greater advantage, you should select the middle of the day, when the sun is in his full power, and the morning of which has been frosty. There is every excuse for a person in this case using all the means which ingenuity and experience may suggest: you will see perhaps a pack of grouse running from you, at the distance of five hundred yards, and it would be the height of imprudence to follow them up, under the idea of being able to get a shot; probably, at the next step you took, they would all rise together, and fly for a mile, and would invariably serve you in the same manner if in a similar way pursued. There are,” he continues, “various stratagems made use of, both to draw them to you, and to induce them to lie till you can come within shot. To

attain the first, you are either to go by a circuitous route and secrete yourself behind a wall, or in a pit, in the exact line they are running, and await their approach; or you are in this situation to endeavour to hasten it, by imitating the noise they make, and calling them to you; but in this case there should always be another in company, to remain in or near the place you first went from, that their attention may be principally confined to him, and taken off from you; and, in order to make them lie, your dog must bear the principal part; for, upon seeing them on foot, if he goes round and stands in the face of them, they will stop instantly, and four times out of five allow you to get within shot." (Letter x. p. 213.) Every stratagem is said to be fair either in love or war, and we fear that this licence is extended in many instances to shooting also; and were not the birds very wily at times, we should think the practices we have just detailed, and that we are going to notice, rather bordered on the confines of poaching. We find it also stated, that, "when grouse are wild, from wet or other circumstances, a perforated bullet fired amongst them will sometimes cause them to drop and lie very close. The bullet should be perforated with two holes intersecting each other in the centre; the whizzing noise frightens the birds, which it is supposed to do by bearing some resemblance to the whizzing of a hawk." We think the effect likely to happen, but we have had no experience of it. Grouse shooters accommodate the size of shot used to the time of the year, state of the birds, &c. Our own practice was, to begin the season with No. 3. for both barrels; as the grouse became wilder, we used No. 3. for the first, and No. 3. and 2. for the second, barrel. When the size and length of flight required it, we employed No. 2. for the first barrel, and No. 1. and 2. for the second. If a single gun be employed, we recommend that you charge it as you would the first barrel of the double gun.

SUBJECT. 3. Blackcock Shooting.

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2613. *Shooting black game (fig. 409.).* We presume that we need not inform the reader that the shooting of black grouse had been long, by law, fixed to commence on the 20th of August, as regarded the northern parts of the kingdom; but the Earl of Caernarvon, who had some black game preserves in the west of England, had sufficient interest to get a bill passed to limit the shooting of these birds in *England* from the 1st of September to the 1st of December; and he well deserves the thanks of every rational sportsman, as well as every lover of his country, who wishes still to see it adorned with these and other winged gems. The high standing of this bird is evident by its protection as *royal game*, an honour never, so far as we know, conferred on any other winged game. It is well, indeed, that it should have such protection, for it is not well fitted to resist the attacks of artful poachers, nor indeed of enterprising sportsmen, consequently it is fortunate that its principal breeding place is Scotland, from whence it can be procured to restock the preserves of the English counties. Black game are pursued much after the same manner as the red grouse; indeed they are often found in the same locality, although it is said, that red grouse affect heather with water at hand, and that black game seek their habitation among woody tracts, which, if true, we think weakens the opinion entertained by many, that any situation that the black grouse occupy is unfavourable to the breeding of red grouse, such inveterate hatred (as it is said) have the black game to the red. This information, however, we must receive with caution, for there are so many spots where both are found together, as our own experience can testify, as to make the statement doubtful. We make no denial to some pugnacity on the part of the black game to the red; but we do not hesitate to say, from all we have heard or have seen of them, that this source of destruction of the red grouse is not greatly to be feared. The blackcock, as regards his intimacy with man, is an uncertain bird, for he may sometimes be approached very near, and at others he is altogether as shy. We however have found him to lie close enough on most occasions, when he could shelter himself under tall ling, particularly if bottomed with brackens. Under the banks of a ravine thus furnished, he is almost certain of being with his family, particularly towards the middle of the day, and if a brisk and nipping wind be blowing. We have ourselves often profited by this observation; and although black grouse at other times avoid tall ling, they now appear to seek its protection.

The young ones, until they have moulted, are by no means very wild, and when harbouring in low brush-wood, they may sometimes be almost kicked out before they will fly, which alone is unquestionably against their thriving in numbers. As they assume the full male dress after their moult, they become both wiser and stronger, and the sportsman must use his best wiles, either to deceive or to reach them.

2614. *Of the methods of attacking black game*, the following is one practised by Mr. Dunbar:—"When black grouse become wild, which they do in October and November, you may follow them a whole day, and not get a single shot at them. The best way then is, in order to bag a few, if you know of any birch woods where they frequent, to get a small pony who will stand firing from his back. No dog is required. The black game you can see at some distance. If on the ground, they will allow you to get within shot, and you may have a fair chance of securing one or two. But early in the morning, just at daylight, they may be seen sitting on the tops of the birch trees, feeding on the catkins, and they will then allow a horse with its rider within a few yards of them. I have known, in one hour in the morning, and another hour in the evening, those being their feeding-hours, as many as ten pair secured in this way. In fact, any person may secure more in those two hours than he would in three days by following them, for so wary are they, and so easily scared, that they take flights of some miles. On the other hand, with a pony, they take short flights, and alight again seemingly stupefied."

2615. "*In Russia*," the same informant observes, "the shooting of the black grouse is conducted in the following way:—Huts full of loop-holes, like little forts, are built for this purpose in the woods frequented by these birds. Upon the trees, within shot of these huts, are placed artificial decoy birds, commonly made of black cloth, with the marks of the natural fowl painted: as the grouse assemble, the company fire through the openings, and so long as the sportsman is concealed, the report of the gun does not frighten away the birds; several of them may, therefore, be killed from the same tree. If by chance three or four are placed on branches one above another, the sportsman has only to shoot the undermost bird first, and the others gradually upwards in succession; the uppermost bird is earnestly employed in looking down after his fallen companion, and keeps chattering to it till he becomes the next victim. During winter, in Siberia, the inhabitants take these birds in the following manner:—A certain number of poles are laid horizontally on forked sticks in the open forests of birch; small bundles of corn, by way of allurements, are tied on them; and, at a short distance, certain tall baskets, of a conic shape, are set with the broadest part uppermost; just within the mouth of the basket is placed a small wheel, through which passes an axis so nicely fixed as to admit it to play very readily, and on the least touch, either on one side or the other, to drop down and again recover its situation. The black grouse are soon attracted by the corn on the horizontal poles, first alight upon them, and, after a short repast, fly to the baskets, and attempt to settle on their tops, when the wheel drops sideways and they fall headlong into the trap, which is sometimes found half full. In Little Russia the price of a pair, cock and hen, is 1s. 6d.; a brace of partridges 10d.; and a hare 7½d." (*Rural Sports*, vol. iii. p. 106.) Black game require full sized shot and a full sized gun, and we recommend a single-barrel in preference to a double. We may also remark, that it is not thought fair sporting of black grouse unless the hen is mostly spared. The shot employed should be the same as is used for red grouse. The black game commonly prefer localities below those of the red grouse: ptarmigan inhabit higher ground than either.

SUBJECT. 4. *Ptarmigan Shooting.*

2616. *Shooting the ptarmigan, or white grouse.* These birds were, in times not long past, to be met with on the lofty precipices near Keswick in Cumberland, and a few also were, since our remembrance, to be found in Wales. The highest hills of the Highlands of Scotland are, however, their chief resort at the present time, and likewise the Hebrides and Orkneys. On the summits of Ben-lawers and Ben-more they may be found perched among the surrounding fragments or stones, with the colour of which they so closely harmonise in their own tints, that it requires a very quick and also a very practised eye to discover them. Mr. Daniel's account, gained from an intelligent friend who had been engaged in grousing in these localities, represents the ptarmigans as seldom taking a long flight, and never soaring aloft but flying low, and making a small circle like pigeons. The shooting of the ptarmigan is marked by a singular tameness of character in unison with the nature of the bird itself. It may be flushed, and it will rise and present its snowy pinions, and is easily brought down when, perhaps, another lies among the white crags immediately before the sportsman, but concealed by the similitude of colour to the spot it reclines on. Even the dogs do not scent them well: there is neither enterprise in flushing them, nor credit in bringing them down from their short flight. They are however, in the early part of the season, a little more on the alert, and affect more covert localities, and then they offer moderate sport; but still it is very inferior to red grouse shooting. Hardy spaniels are the most proper dogs to employ, but they must be under very good command. Colonel Thornton in his *Sporting Tour* cursorily notices their numbers in the lofty summits which

frown over the neighbourhood of Glen Ennoch and its loch; and, according to his own account, he shot several brace there. He also observes that, although in the farther parts of the cairngorms they are tolerably numerous, yet there they actually swarm.

SUBJECT. 5. *The Natural History of the Partridge.*

2617. *The partridge of Britain* (*Tetrao Perdix* Linn.) is of two kinds, one known as the grey or common partridge (*fig. 410.*), and another much less commonly met with, and



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known as the red-legged, and by some as the French partridge (see p. 88.), from its abundance in France. The English partridge, as it may truly be called, has much claim both to our regard and our admiration; and although he is to be met with in almost every part of Europe, he can hardly be said to appear in such plenty any where as here. In France and some other continental countries, although the partridge is to be found, yet it is comparatively scarce; the red variety predominating so much there, which, although it is somewhat larger, is nevertheless much inferior in flavour. As an article of food our partridge is very highly prized, and therefore is costly when purchased. The partridge is under the protection of the law; and we cannot agree with Mr. Daniel, who seems to consider "this interference as contrary to the spirit of

English legislation." "Were these birds," he says, "solely nourished on those grounds that belong to the person whose entertainments they improve, the man who fed might claim them with some show of justice; and, like a peacock or a turkey, they might then be ranked as private property. However, the law has taken partridges (wild as they are) under its protection; and the only difference now is, that one is fed upon the farms, the other in the yards; these are contented captives — those are servants that have the power to change their master by changing their abode." (P. 70.) We again state that we view this matter somewhat in a different light. If any one has an inherent right to them, and to the other wild animals which are common to our grounds and our forests, it must be the owners of such grounds; and although the partridge, the pheasant, the hare, and the rabbit, are not strictly confined to one field, yet they are very commonly localised within the limits of one estate, on which they are begotten, reared, and remain as life tenants. Has not, therefore, the owner of the tract on which these animals are bred and reared as much right to them as he has to the geese, ducks, and fowls, which once were as wild as partridges, pheasants, &c. &c. are now in the remotest districts? Were also a legal guard and a particular provision not made for the protection of these animals, they would in the first place be exterminated, and in the next there would be little inducement for great landowners to live on their estates, and by their presence to encourage civilisation, and a desire for mental cultivation among their tenantry, which begets a community of interest between them both. But to return to the partridge, our immediate subject. Regard his trig and plump shape; filled out at all points he looks like a feathered Bacchus with a bay crescent adorning his breast; and, thus adorned, say whether he does not claim to rank if not with our most brilliant winged tribes, yet as one of the most neat and dapper amongst them? Bewick describes the partridge as "about thirteen inches in length. Bill light brown, eyes hazel, the general colour of its plumage is brown and ash, beautifully mixed with black; each feather streaked down the middle with buff; the sides of the head are tawny; under each eye is a small saffron-coloured spot, which has a granulated appearance, and between the eye and the ear a naked skin of a bright scarlet, which is not very conspicuous but in old birds; on the breast there is a crescent of a deep chestnut; the tail is short and drooping, the legs are greenish white, and furnished with a small knob behind. The female has no crescent on the breast, and her colours in general are not so distinct and bright as those of the male. The moult takes place once a year. Partridges are found chiefly in temperate climates, the extremes of heat and cold being equally unfavourable to them: they are no where in greater plenty than in this island, where, in their season, they contribute to our entertainments. It is much to be regretted, however, that the means taken to preserve this valuable bird should, in a variety of instances, prove its destruction: the proper guardians of the eggs and young ones, tied down by ungenerous restrictions, are led to consider them as a growing

evil, and not only connive at their destruction, but too frequently assist in it. Partridges pair early in the spring; and, once united, it is rare that any thing but death separates them. The female lays from fourteen to eighteen or twenty eggs, making her nest of dry leaves and grass upon the ground. The young birds run as soon as hatched, frequently encumbered with part of the shell attached to them. It is no unusual thing also to introduce partridge's eggs under the common hen, who hatches and rears them as her own: in this case the young birds require to be fed with ants' eggs, which are their favourite food, and without which it is almost impossible to bring them up: they likewise eat insects, and, when full grown, all kinds of grain and young plants. The affection of the partridge for her young is peculiarly strong and lively; she is also greatly assisted in the care of rearing them by her mate: they together lead them out in common, call them together, gather for them their proper food, and assist in finding it by scratching the ground. They frequently sit close by each other, covering the chickens with their wings like the hen. In this situation they are not easily flushed; the sportsman, who is attentive to the preservation of his game, will carefully avoid giving any disturbance to a scene so truly interesting; but should the pointer come too near, or unfortunately run in upon them, there are few who are ignorant of the confusion that follows: the male first gives the signal of alarm by a peculiar cry of distress, throwing himself at the same moment more immediately in the way of danger, in order to deceive or mislead the enemy; he flies, or rather runs along the ground, hanging his wings, and exhibiting every symptom of debility, whereby the dog is decoyed. In the too eager expectation of an easy prey, to a distance from the covey: the female flies off in a contrary direction and to a greater distance, but returns soon after by secret ways; she finds her scattered brood closely squatted among the grass, and collecting them with haste by her jucking, she leads them from the danger before the dog has had time to return from the pursuit." (P. 348.) Colonel Montague, however, corrects an apparent error in Bewick's description, which is very generally received has a fact. "It has been," says this esteemed ornithologist, "long an opinion amongst sportsmen as well as naturalists, that the female partridge had none of the bay feathers on the breast like the male. This however is a mistake, as we have proved by the unerring rule of dissection; for, happening to kill nine old birds one day, with very little variation as to the bay markings on the breast, we were led to open them all, by which we discovered that five of them were females; and, by re-examining the plumage, found the males could only be known by the superior brightness of colour about the head, which alone seems to be the mark of distinction after the first or second year." (P. 355.) The partridge may be considered as essentially a granivorous bird, and although the grouse, both black and red, may be found among the stooks or corn sheaves in the north, when pressed by hunger and inclement weather, yet they do not, like the partridge, principally confine themselves to cornfields, or other grain-yielding spots. As a mother the female partridge merits our unqualified approbation. Her nest is a very rough one, it is true; but it answers all the purposes of incubation and nidification. It is made on the ground in grassfields, in cornfields, in clover, in furze, and sometimes, though not often, on the top of a ditch. May is the month in which the eggs are usually laid; and from the latter part of it to the middle of June are the extremes of time for the hatch, the setting occupying three weeks. In all these cases it is the almost general opinion, founded on observation, that the male bird assists also; and, when the young are hatched, it is well known that his solicitude in leading the brood abroad, and in searching for ants' eggs and larvæ of numerous other insects, is great. Some sportsmen, however, deny that both parents lead out the young broods in common; but which we are, from personal observation, disposed to think is the case. The call of the hen bird is not the same with that of the cock; his is more sharp and severe — her call is lower and softer. In fact they have several calls, all intelligible to themselves. One very important one, and to the practised sportsman readily recognised, is their *jucking*, when they settle down together for the night. A similar distinction between the call of the cock and that of the hen of our domestic poultry may likewise be remarked. Mr. Lascelles tells us he has watched them by the hour, and has detected the cock bird in every instance to be, in his own words, the principal in office. We also have watched a covey of partridges, and observed the cock to appear to be the chief in office; and as long as the young are unable to fly, he is most assiduous in his attentions to them; but as soon as they can rise on the wing, however imperfectly, his paternal care slackens. It is not so with the hen; her watchfulness continues, and indeed increases; she is never far from them, but searches for food for them, and leads them abroad to their scratching ground, and, when they tire, gathers them around her. In fact her attentions last until they are within a third as large as herself, by which time they can shift for themselves. Such are the conclusions we have drawn from observations made on every convenient opportunity. Consequently, although we agree with Mr. Lascelles in part, we dissent also in opinion in the degree we have pointed out. We have no hesitation, however, in asserting, that both the paternity and maternity of partridges are interesting proofs of the care implanted by Nature in birds, — first to propagate, next to incubate, and then to foster to maturity the young committed to their care.

SUBJECT. 6. *Partridge Shooting.*

2618. *Partridge shooting* (fig. 411.) August 31st. — “Well! brother sportsman, what auguries for the coming morn? Fair weather or foul? a wind or a calm?” “Well! my good

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friend, I must in reply say, you have anticipated me by two steps and a half, for I was at that distance from you when I was going to cry out, Fair or foul! — However, I suspect we shall both agree that the skies, though lowering, are not apparently surcharged with water; and farther, that the mists which hung over our hills for the last two or three mornings have all rolled upwards, and left us a bright sky.” “Bravo! excellent signs! I shall therefore go home and give Basto and Juno a good meat supper, which will carry them through the day’s sport I anticipate; so, until to-morrow’s peep-o’-day, adieu!” September 1st, four o’clock. — “All right!” says our master sportsman to himself, “What a glorious morning! although at present I can hardly see my way across the meadows for the fog:” yet, being confident that the sun would be ready to break out very soon after he reached the forty acre field, he was most anxious to be gone, for he had, for weeks past, assiduously watched the safety of five coveys of birds that had been hatched and feathered there. Our anxious sportsman, however, waits a few minutes longer for his companion, every now and then showering down a negative blessing on him for being so tardy. “Come along! come along!” he cries, as he espies him; and off go the pair towards the forty acre field, Basto and Juno bringing up the rear, for their master was much too good a judge to allow dogs so likely to be actively engaged the greater part of the day to waste their strength in running a long way ahead, that they might have the same distance to run back again. As they moved along the companion inquired of his friend, what he thought about early morning shooting? “What do I think? why, as almost every sporting body does, go out by sunrise to it, that must be the right time; and unless you can afford to have sharp lookers, how can you hope to prevent your birds being killed off before you get to your ground?” “True,” replies the other; “but I read last night in a book written by Colonel Hawker, who seems to be the great gun of all gunning sportsmen, that much game as he has known killed in September, he did not recollect ever having seen great execution made among partridges before breakfast.” “True,” replies the other; “but, without putting ourselves to the expense of sending two or three sturdy fellows to warn off intruders, if the birds have escaped being killed by that time, they are certainly dispersed abroad; and the advantage of our knowing their feeding and their basking grounds is nullified.” We ourselves are disposed to place much dependence on the opinion of Colonel Hawker in all sporting matters connected with the gun, and we think he is not wholly mistaken in the opinion he has formed on the subject; but when we consider the irresistible stimulus there is in the breast of almost every sportsman to be up and on his ground early in the morn of the 1st of September, and when, with our friend just quoted, we consider the certainty, that, unless you are in a situation to have watchers on your grounds to prevent the birds from being disturbed, your chance is a bad one; and that however true it may be that a dewy morning may not yield many birds, we nevertheless would recommend the sportsman by all means to be on his shooting ground in proper time; that is, not only in such time as would bring him into collision with the game, but that which will likewise prevent intruders from marring his sport and ruffling his temper. We hardly need observe, that it is also a great advantage to the sportsman, if he have already made himself aware of the number of coveys in each field, the extent of their usual flight, and the spots they principally use as feeding ground, where they water, where they bask at noontide, and where they preen, scratch, and gravel. The well practised hand likewise who shoots near home, makes himself acquainted with all this; and when a cockney, or less expert friend, comes to shoot with him, he is astonished at the tact he sees displayed. Previous considerations are likewise useful in calculating the probable chances of success, and at least they add to the reputation of the sportsman. Foreknowledge will teach that the birds may be expected to

be scarce when the breeding season was wet. A heavy fall of rain, although not of long continuance, will do much injury when it occurs at the hatching time, for the water probably either drowns the callow brood, or the cold engendered chills the vitality of the eggs. We have some reason for thinking that a heavy thunder-storm will do the same. Neither is the proximity of meadow-land in large quantities favourable to sport, and consequently many attempts have been made to prevent partridges from breeding in grass fields, but in most instances without effect, for grass bred birds will incubate in grass meadows, and corn-land bred birds will commonly choose such spots for their nidification. Hunting, beating, and other disturbances to the meadows, steadily pursued as long as the crop of grass would allow it, and even roping of fields, have all been found to fail as preventives to such breedings. Propagation is the grand work at that time, and the utmost vigilance that tends to prevent a suitable place being chosen to rear the young will be eluded, although we have always been averse to meadow-land for partridge shooting, however much we have esteemed large grass tracts for our coursing sports.

2619. *Arrived at the ground.* It is agreed between the friends, that they shall be distant from each other about thirty yards, more or less, according to circumstances; and it is also understood that, in beating the ground, a straight course is not to be pursued, but rather that it be traversed crossways, giving the dogs the whole or a side wind, as appearances might dictate, but by all means beating it so carefully that no outlying bird can escape. And see, they now advance — Juno soon throws up her head and feathers; Basto takes the lead, and in less than a minute is a fixture. Good dog! escapes from the master in an under tone. Whirr! both sportsmen fire; bang! bang! sound the guns, and a bird drops to each. Our well practised hands keep their places, marking down the covey which luckily does not leave the field, but settles at the further extremity. Seek bird! is now pronounced, and the well broken animals hie away, each to their respective bird; and, to show their sagacity, each brings that of their side to the sportsman who killed it. Reader, this is a tale, but no fiction. It was enacted as we have related it, and it occurred when we lived at Norman House near Bishop Stortford, we acting the part of the friend of the owner of the forty acre field. It is, however, not always that the sportsman is so fortunate in his dogs as in those we have just noticed; on the contrary they are often young; and, not only young, but are not yet quite steadied. In such case, we say, avoid letting them lead up to the birds, or mischief may ensue; but we repeat, that with well broken dogs it is not a bad practice, and perhaps few sights can be more gratifying than to see one go well up to his game. In an instance of this kind the partridge will skulk and crouch to the dog, but before the gunner, if there be the means, they will run fifty or even a hundred yards, and will then rise out of gun-shot. Footing of partridges, though a very essential qualification in pointers, is one of the last things they are taught, and it should be so; for they are not to be trusted at it until they are made fully aware that it is not expected of them to catch the bird, all that is required of each being only to act up to the name of *index*, or *pointer-out*, of the presence of the bird on or about that spot. We will take this opportunity of observing, that partridges will commonly lie better to dogs that wind them, than to those that track them; the reason of which is, when they are winded, the dog does not go straightforwardly towards them, but follows the scent left by their devious course. When birds see a dog thus trace their footsteps down wind they will be off, for he cannot take the scent until very near them. Some sportsmen also, we beg to remark, and even such as we should not expect it of, look for the same conduct from their dogs on the moors as in the stubbles, which is certainly erroneous, for the breaking of the dog for grouse shooting and for partridge shooting is not and ought not to be the same. The grouse being strong, and each being disposed to act more independently than partridges, which is as much as they can *pack* in the true sense of the word, it follows, that if you find one you find all, and if one rises all rise. Grouse on the contrary, when they are on the point of losing their name of poults, will often separate; indeed it will almost assuredly be so with the old cock, who, leaving the pack, will run with incredible speed, often down wind, to elude you; and in fact the whole brood, when well feathered, will disperse, and the sportsman then must either follow them, or must set his dog, and going round by himself may reach them. In this case the dog must also be extremely well trained, and indeed we have seen this game so pursued by the pointer in the stubbles with success.

2620. *The time of the year in partridge shooting* influences the practice of the sportsman. The weather, the relative domesticity of the birds, and the degree of hunting they have had, should all be taken into consideration. By domesticity we mean, whether they have heretofore confined themselves to the limits of a fertile farm in a corn country, as Essex or Hertfordshire, or whether they have been used to take an extensive range over the Norfolk, or such like open lands. The flight of a covey in these diversities of ground varies greatly, and consequently it very much alters the extent and mode of pursuing it. In the one case a détour of a quarter of a mile, perhaps a furlong, or even the passing of a hedge, will again bring you on your covey; in the other a stretch of a mile, or even more, is necessary to enable you to reach them. Some excellent sportsmen prefer the employing

of setters in partridge shooting, and certainly they cover the ground quicker than pointers, and they also carry with them somewhat of an air of high pretensions. For ourselves we have always preferred pointers to setters for this sport; but it is probably habit rather than deliberate examination and experience that has occasioned this predilection. A steady pointer however, it is known, will go out the first day of the season, and perform as well as he did the last day of the season past; and this is what is wanted by many persons. A setter, on the contrary, unless old and in constant practice, is apt to be a little too eager the first day. We shall say little about the number of sportsmen that go out on this occasion, nor on the attendants that accompany them. We propose to describe a scene of legitimate partridge shooting, in which two gunners and two dogs are engaged. Be it however observed, that we have no objection if the means and the wishes of these gents tally with it, if so be that a marker and keeper with a led dog be added to the *coterie*. Nor are we adverse to a shooting pony for the use of the lame, the lazy, or elderly shooter, making one of the party. Tastes differ very widely. We do not enjoy a battue which others delight in; but we confess that, in systematic grouse and partridge shooting, the number of real shooters should be limited; the attendants however, provided they keep their proper distance, may be *ad libitum*. We ourselves having reached the grand climatic, although still enthusiastically fond of gunning, with all its appliances to boot, are not ashamed to avow that, when alone, we had rather shoot to one dog than to two; and we believe the steady shooter will kill more birds to one than to two, at least he will do it more pleasantly to himself. When two sportsmen are engaged, be they old or young, then, certainly, two dogs offer more chance of sport than one. It often happens that a disturbed covey purposely breaks pack, and then one dog may be seen pointing at one angle of the field, and the other at another; and, when so disgregated, the farthest dog will not gain blame or lose cast by not backing his fellow dog; but, on the contrary, will be justified in acting independently, and steadily point his own game. Colonel Hawker is very concise on shooting, but he is pithy in what he does say. He recommends that, when birds are expected to be in high stubble, turnips, and as we should suppose in coleseed and in mangel-wurzel also, that to avoid noise the sportsman should lift his legs well up, and with light steps advance quickly, and in a stooping attitude, which will prevent the birds from seeing him so soon. A caution he likewise gives with regard to birds in hedges is extremely judicious: we will give it in his own words:—"If a dog stands at a high hedge, go yourself on the opposite side, and let your servant be sent where the dog stands. When he hears you arrive opposite, let him call to you; and when you are ready for him to beat the hedge, give a whistle; because the bird, being less alarmed at a whistle than a man's voice, will most likely come out on your side. Some people heigh the dogs in: this, I need not tell a sportsman, is the way to spoil them, and to prevent them from being staunch on such occasions. It sometimes happens that there is a close twisted hedge on the opposite side, so that the birds, in order to extricate themselves, must face the dog; and it is for want of cunning to do this that young birds are so often caught in hedges, to the great delight of ammunition savers and pot-hunters. In the latter case keep with your dogs, and send round your man to poke the hedge with a stick." (P. 147.) The prudent sportsman need not mar his own diversion by following the birds in the same track every day. If he be bent on shooting thus often, let him hire an extensive manor, but by no means selfishly harass any one locality. Much difference of opinion also prevails on the subject of partridge shooting in windy weather. We knew a gentleman who professed to think no weather but that which was accompanied with a gale was fit for this sport. He was very eccentric in every thing; we would not therefore cite him as an authority: and whether it was that the wind blew away what he shot, as well as what he did not shoot, we cannot tell; but it was seldom that his friends could get a sight of any proceeds from his windy excursions. Indeed boisterous weather can only be favourable under one view, and that is because birds do not so readily hear the approach of the sportsman. However, be it observed, that in a wind they seem themselves panic-struck, and will sometimes lie so close as to afford excellent sport; but for one windy day that they will lie like stones, as the expression goes, they will prove ten days as wild as hawks, particularly if with the wind there be some showers. We have found them, under this latter case, take to the woods and to furze; coleseed is likewise likely to harbour them in windy weather: in Ireland a high wind sends them among the potatoes. Under such circumstances one might also expect to find them among turnips; but we have not usually found them there in boisterous weather if accompanied with rain. In windy weather we hardly need remind the sportsman, that he should take the windward side of his beat, otherwise he will be likely to drive them off the land, and into the very hands of other parties abroad.

2621. *Midday shooting next claims our attention.* As the day advances the birds leave their feeding-places about ten o'clock in September and eleven in October, during which month they become less regular in their habits, and less and less so as the season progresses, influenced as they are by so many operating causes, as wind, rain, sleet, snow, gleams of sunshine, and also by contending disturbances from coursing as well as shooting parties.

Our statement of the feeding and basking times, however, must not prevent the sportsman from trying the stubbles in the middle of the day. The partridge is not only himself, perhaps, changeable in disposition, but is liable to be acted on by so many accidental causes, as enemies real or imagined putting him and his charge to flight. As the day progresses, according to the time of the year, the birds regularly visit their feeding grounds, which are principally the stubbles, as long as grain is to be found, and fine weather has kept it parched; but when it is become sodden by much rain, it is not so well relished by them. In an inclosed country, their flights are not usually very long, unless a ravine or deep valley is near, when a sense of safety will induce them to cross it, as we have repeatedly seen. On one occasion we directed a friend and visitor to cross over to such a ravine half a mile distant, and post himself a furlong beyond on a slope, we ourselves remaining in a stubble field which skirted a wood of our manor. For more than an hour we got shots by the passing and repassing of this covey, by which we each picked up birds at single shots. In the latter part of the season small woods, thick hedge-rows, furze covers, broom, fern, beet-root when left out, and coleseed not cleared off, harbour partridges. We therefore recommend the industrious sportsman to try every place likely and unlikely; such, for instance,



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as sitting on a stile, and surveying all around him. Nay, frown not, good reader; nor smile you who are sarcastic; for we can assure you that as fine a cock bird as ever wore the bay horse-shoe fell to the lot of a lazy sportsman who lingered on a stile in a bad scenting day. A shot not far off was heard, and in a few seconds the partridge we have specified fell within a few yards of him. The partridge had been struck by a hawk, who on sight of the gunner mounted with his prey, and in his flight received the contents of the sportsman's gun, which brought both to the ground together: the shooter not appearing, the *stil-ish* sportsman bore off both birds.

2622. *Shooting in the after part of the day is good practice.* When coveys have been pursued in the morning, they should be allowed some respite. You, brother sportsman, require it for yourself; spare it also to the poor birds, who, thus eternally hunted out, will seek a new locality and frustrate your views: pursue them but fairly, and they will yield you amusement for the whole season: remember, there is a wide difference between the fair shooting of game and destroying it by wholesale. After-dinner shooting is often very productive of sport, and, when pursued by the humane and fair sportsman, is much to be recommended. It is not the use of the gun, but the abuse of it, that we would condemn. We are, however, not so set against morning shooting as Colonel Hawker, who thinks it almost waste of time. Perhaps the gallant colonel courts the morning pillow; but we think not even his precepts, much as they are respected, will keep the ardent sportsman out from the field in the mornings of September and October. He, however, instances

a fact, which tells in favour of his opinion, which is, that a sportsman of his acquaintance killed twenty-three brace of birds in one day, three only of the number being killed before nine o'clock; and he adds, that the sportsman he alludes to was himself of opinion, that he should have killed at least seven brace more, had he, instead of starting at daylight, waited until half-past seven or eight o'clock. (See p. 155. 7th edition.) The colonel, in common with every good judge of the matter, is favourable to having good markers; and three such, he observes, are not too many if the country be open and the company numerous. He likewise would have the birds dispersed, and then the dogs headed by taking an extensive circle. "Try," he says, "the hills first, and drive the birds into the vales to kill them." The colonel has quite gained our suffrages by the benefits which he says are likely to arise from trying the fallows on a cold raw day. On such a day in Essex, Hertfordshire, and Northumberland, the principal scenes of our sporting adventures, we always turned our steps to them, and we never recollect having reason to repent it. When we were in Ireland we fell in with two sportsmen, not very crack; they, however, did us the honour of requesting our company to a turn among the spent stubbles and the potato grounds. We represented the fallows as the most likely haunt for birds at that time of day, and to them we directed our steps. Nor shall we ever forget how soon after we entered the field we could plainly discover, by the glistening of the melting moisture of the hoar frost, the forms of three or four birds crouched among the clods. In vain we pleaded the propriety of springing them. No, these gents would not lose an opportunity but seldom gained; both fired, and both, to our great delight, missed his bird as it lay: but he observed, that unfair sporting is not the true Irish character, and our friends were young.

2623. *A preponderance in the number of cock birds* is supposed to occur in the breedings of each season, in consequence of which the hen partridge is so tormented by a number of males, "that she drops one egg in one place and one in another, until there remains for her but one cock and no nest. The best mode," we are told, "to destroy the superabundance of cocks is, during the first three weeks of the season, to net the covey, and destroy all the old cocks, leaving as many young ones as hens, or even one less; for it is certainly better that the hen should look for the cock (which she undoubtedly will find), than a number of cocks for a hen. It should be recollected that, where old birds are left, they will at the pairing season drive off the young ones, and prevent their breeding; for let any sportsman declare if ever, on finding a single brace of partridges in the shooting season that have not bred, and are termed by sportsmen a gelt pair, he has found a covey near the same place where he found them; which can be only accounted for by the old birds driving the young ones from the ground, and preventing their breeding there. It is therefore a wrong notion, that some birds should not be killed every year; and those gentlemen who have manors will find, by not allowing some to be killed, that in a short time their grounds will be entirely destitute of game. The late Earl of Kingston had a great quantity of grouse on his mountains in Ireland before they were preserved; but he thought by leaving them quiet for a couple of seasons that he should have had a much greater abundance; he therefore did not allow a shot to be fired on those mountains for two seasons, and it is well known they were carefully preserved during the whole time. On collecting, however, a large party the third season, and going out to grouse, many of the gentlemen who had been in the habit of shooting there prior to its being preserved were surprised to find a great scarcity; the reason of which was, certainly, that the old birds drove the young ones off; and all the mountains adjoining the Earl of Kingston's were swarming with game, although they had not been preserved. It is the same with partridges; the late Col. Hyde of Castle Hyde, county of Cork, Ireland, who wished much to increase the breed of them on his grounds, pursued the following plan which proved successful:—His gamekeeper, in the early part of the season, netted a number of birds, reserving all the young ones with some old hens, and after destroying all the old cocks, he turned the young birds into a large place he had built purposely for them, and let them go again on the 1st of February following; and he had, in consequence, a great abundance about him. If, therefore, this method answered so well, it would certainly be worth any gentleman's while to adopt the same plan. There are many sportsmen who have so keen an eye as to be able to ascertain, when the partridges take wing, the difference between a cock and a hen; if so, it is to be wished every sportsman would kill the cock in preference to the hen, and then the breed of partridges would be greatly increased throughout the kingdom." (*Shooting Directory*, p. 102.) We presume the following stratagem, related by Mr. Daniel, of a careful mother among these birds, as being in a locality known to both him and ourselves, is without doubt entitled to our full credence, and is worthy of notice on account of its interest:—"Upon the farm of Lion Hall in Essex, belonging to Colonel Hawker, 1788, the following extraordinary incident of a partridge depositing her eggs was known to many persons. This bird chose the top of an oak pollard to build her nest; and this tree too had one end of the bars of a stile, where there was a footpath, fastened into it, and by the passengers going over the stile before she sat close, she was disturbed and first discovered. The farmer, whose name was Bell, apprised Mr. Daniel of the circumstance,

which he laughed at as being the report of his workmen, and saying, that it was only a wood-pigeon they had mistaken for a partridge; but Master Bell, who had killed some hundreds of partridges, so positively affirmed his having beheld the bird upon the nest on the tree, and also at another time having told the eggs to the number of sixteen, that Mr. Daniel was persuaded to ride to the spot, where the partridge was seen sitting: in a few days she hatched the sixteen eggs; and her brood, scrambling down the short and rough boughs which grew out all around from the trunk of the tree, reached the ground in safety." Partridges are subject to the same mutations of clothing as other birds; they have been seen entirely white. "A covey of nine partridges," this same author tells us, "were bred upon a farm of the Hon. J. Olmuis, at Sandon in Essex, four of which were pure white, and three of the others were mottled. In 1804 a partridge was killed by Mr. B. Dudley's keeper, that had half the longest feathers in each wing of a milk white, and the skin of the centre claw of both feet was of the same colour. In 1796 at South Cave," he also informs us, "that at Mr. Barnard's, near Market Weighton, was a covey of eight partridges; four of them were the most beautiful clear white, three were pied; the eighth bird escaped from under the net, by which the other seven were secured; they were kept alive in the mew, and considered as great curiosities." (*Rural Sports*, vol. iii. p. 75—80.) We have already observed, that it is sometimes fair to net partridges, that we may select the cocks, whose average increase is about one-third beyond the number of hen birds. This disparity, which we believe we have already noticed, is best kept down by tunnelling them, that is, by taking them in what is called a tunnel net, and then destroying the superabundance, so as to make the number of cocks and hens equal. We would also embrace this opportunity of aiding Mr. Thornhill in his laudable endeavours to increase the breed of partridges, by stating that where circumstances occur to destroy a hen partridge when incubating, such as by her being trodden on, rolled over, or cut by the mowers, that the eggs should be immediately placed under a sitting hen, where they will be assuredly hatched, provided that care be taken, when the hatch takes place, to alternately moisten and dry the egg shell with warm water, not allowing more than half a minute for each process. This moistening is requisite to dissolve the gluing effects of the greater heat of the body of the hen of the barn-door fowl over that of the hen partridge, which is such in most cases as to stick the feathers of the young partridge to the shell so tightly, as to prevent its liberation unless assisted by such a careful moistening of the shell as shall dissolve the adhesive attachment without injuring the bird.

2624. *Grass-bred birds*, — do they require any particular method of pursuit? We reply, very little; for as soon as the young ones can fly they follow the mother to the field, who, until they were able to do this, had fed them with ants' eggs and insects, by which they gain strength to fly, perhaps greater even than at their early state they could accumulate from grain. A covey of birds shot into a very few times teaches them instinctively to disperse for safety; but at first they reassemble very quickly, and the call that is made is easy to be heard, and the flight also to be distinctly seen in a level country. After some time however, when the birds have been much pursued, they do not assemble so quickly, but still they communicate, and, if we mistake not, we ourselves are the first who have remarked on this call of communication, as being one essentially different from that of the call or *jack* to unite the segregated covey. The *call of communication* is first made in an under tone; it has nothing sharp in it, but if the sportsman has a good ear, and is within a suitable distance, but concealed from observation, he will find it is not given in vain, but will be responded to by the young birds in a tone soft and something like the call made by the parents. That it is a call of communication only, as "how be ye?" "where are ye?" is evident, for we do not remember in any one instance its being followed by a junction or flight of the birds. We would recommend this to the sportsman's particular notice, not only as a curious fact in the natural history of this bird, which we think it will prove to be, but likewise as furnishing a practical notice that may be turned to account.

2625. *The domesticity of the partridge is not great*, and we are sorry that we cannot say any thing favourable of this high prized bird in this respect. Partridges reared under a hen even will not bear strict confinement, however at first they may seem to thrive and to own the foster-mother that feeds them, they gradually become wild, and eventually altogether estrange themselves from her who had seemed to have been regarded by them as their protector. If, in such a case, they are attempted to be permanently retained, we believe they one and all invariably die. One reared by the Rev. Mr. Bird, we are however told of, which long after its full growth, though not entirely domesticated, would yet attend at the parlour window to receive its breakfast, and would also occasionally come within doors, and in cold weather it has been seen to stretch itself out on the hearth to collect the warmth by basking.

2626. *Broken coveys yield the best sport*. While the young birds have the old ones with them, they are, as the gamester would say, "up to every move on the board." Deprived of them they are truly discomfited, and do not know how to act. It is now that the well practised sportsman with steady dogs ferrets them out, as we might say, from places likely

and places unlikely; for we know hardly one, except it be within a stopped bottle, that a stray bird may not be driven into when urged by fear to seek for safety. Search therefore, brother sportsman, closely, and you will pick up many a stray shot, the very exertion of doing which, when attended with success, will make the bird doubly prized. How elated is Ponto when a missed bird is recovered; and how well he knows when you are in pursuit of a particular one, and how eagerly he tries to further your views, by devices extra-instinctive; indeed they are rational. We have hitherto advanced no recommendation on the subject of the gun, whether it should be a double or a single one. Unless the shooter is sufficiently an adept to bring down a bird with each barrel, he may with much propriety avoid the trouble, fatigue, and risk, attending two barrels. The risk, however, is now much reduced by the safety stop. If the smoke does not prevent the shooter with a double gun, we would advise him not to take it down, but, merely altering his point, to take his second shot. As many as eight and ten successive double shots have been fired without a miss or a mishap. Our own plan was, when we went out for partridge shooting on our own ground, to use a single gun only; because we had the means on our own manor of keeping off intruders, and, as sometimes our walk was extended to a considerable distance beyond the limits of our own manor into other friends' grounds, both for ease to our arms and for decency of appearance, for double guns were thirty years ago regarded rather as a poaching than as a fair sporting article. We repeat, we then carried a single gun only, and a single one we would recommend to the steady shooter who can go out whenever he lists. He will with this not be remarked on as a murderer, but will receive two invitations for one to shoot on other grounds than his own: but, be it observed, this remark is intended for the more humble gunner, and not for the *élite*.

2627. *Should any inquiry be made as to the size of the shot employed in partridge shooting*, we would reply, that as the season advances the size of the shot should advance also. Nos. 5. and 6. if the shooter has lost the unnecessary prejudice against mixed shot, will answer his purpose for the first fortnight: he may after this use No. 5. only, or Nos. 4. and 5.; and in October he may (if he shoots over a very open country where long flights are taken) with propriety charge with No. 3. These hints are general only; but we know them to be substantially correct, allowance being made according to the size of the gun, whether single or double, &c. &c. (See this subject fully discussed at p. 780.)

SUBJECT. 7. *The Red-legged Partridge.*

2628. *The red-legged or Guernsey partridge* (*Tetrao Rufus* Linn., p. 88.). Extended as our sporting travels have been, we however have not seen many of these birds, and we have pursued still fewer. We will therefore introduce Mr. Daniel's account of them, as being one of acknowledged accuracy and much interest:—"This bird, besides his names of Guernsey and red-legged, is likewise known to many as the French partridge from his abundance in France. It is larger than the grey, and the bill and irides are red; the forehead is grey brown; the hind head is rufous brown; the chin and throat white, encircled with black; added to which is a band of white over each eye to the hind head; the fore part of the neck and sides of it are cinereous, with two spots of black on each feather; the hind part of the neck, rufous brown; the back, wings, and rump, greyish brown; the breast, pale ash-colour; belly, sides, thighs, and vent, rufous; the sides marked with lunular streaks of white, black, and orange; quills, grey brown, with the outer edges yellowish; the tail composed of sixteen feathers; the four middle ones, grey brown; the next on each side, the same, but rufous on the outside; the five outer ones, rufous on both sides; the legs are red, and the male only has the blunt knob or spur behind them. It is a common pastime in the Isle of Cyprus to use these birds as we do gamecocks, for the rational amusement of hutchering each other. It is abundant in various parts of Europe, Asia, and Africa, in many parts of Italy and France, and also in the islands of Madeira, Jersey, and Guernsey, and is so plentiful in the Isle of Nansio, as to be the pest of the inhabitants, who make it a rule to collect as many eggs as possible every year in order to lessen the breed, which in some seasons have totally eaten up the fruits of the harvest. These eggs, which are taken by thousands, are prepared with different sauces, and supply the islanders for many days. According to Tournefort they are so tame in the Isle of Scio, that they are driven to seek their food in the fields like so many sheep, and that each family entrusts its partridges to the common keeper, who brings them back in the evening, and he calls them together with a whistle, even in the daytime." Another account states, that "in the country round Trebizond a man was seen leading above four thousand partridges; he marched on the ground, while the partridges followed him in the air, until he reached a certain camp, three days' journey from Trebizond; when he slept, the birds alighted to repose around him, and he could take as many of their number as he pleased." In Provence persons have acquired the art of assembling numerous flocks of partridges, which obeyed the voice of their conductors with wonderful docility; and they most probably were birds of this species which Willoughby thus notices—"A certain Sussex man had, by his industry, made a covey of partridges so tame, that he drove them before him, upon a wager, out of that county to

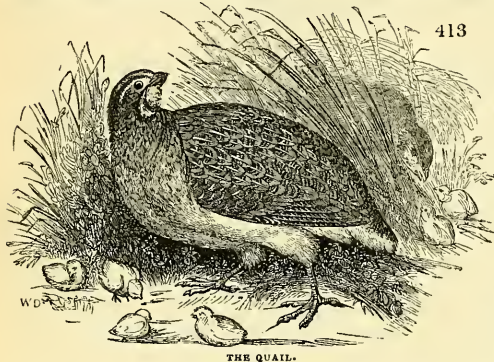
London, though they were absolutely free and had their wings grown." These partridges would, in all probability, have beaten Lord Orford's geese: that nobleman, in 1740, made a considerable bet with the late Duke of Queensbury, that a drove of geese would beat an equal number of turkeys in a race from Norwich to London. The event proved the justness of his lordship's expectations; for the geese kept on the road with a steady pace, but the turkeys, as every evening approached, flew to roost in the trees adjoining the road, from which the drivers found it very difficult to dislodge them: in consequence of stopping to sleep the geese beat their competitors hollow, arriving at their destination two days before the turkeys."

2629. *The red partridge* is said to be fond of mountainous situations, well covered with wood; and it seems as if this species alone was known to the Jews, since in the first book of Samuel it is represented as an inhabitant of the mountains; in David's appeal to Saul, "The king of Israel is come out to seek a flea, as one would hunt a partridge on the mountains." The flesh of these birds is white, and by some considered of higher flavour than the grey: in France they are made into pies, and highly esteemed. In two points the red differ from the common partridges,—in being found in flocks, whereas among the latter only those belonging to the same covey herd together; the red are also observed to perch on trees, &c. which the common partridges never do, and perhaps have not the faculty to do; yet, in roosting upon the ground, they are not indifferent to their own preservation, for, through apprehensions from polecats, stoats, &c. they never trust themselves to coverts, but nestle together in the midst of large fields, far removed from hedges and coppices, which they love to haunt in the daytime, and wherein they lie more secure from the attacks of rapacious birds. So far back as the time of Charles the Second, several pair of these red-legged partridges were turned out about Windsor to obtain a stock; but they are supposed to have mostly perished, although some of them, or their descendants, were seen for a few years afterwards. The late Duke of Northumberland preserved many, in hopes of their increasing upon his manors; but the late Earl of Rochford and Marquis of Hertford have been at the most expense and trouble to establish them in this country: both these noblemen had not only numbers of the birds sent over from France, but also imported many thousand of their eggs, which were hatched under hens, and set at liberty at a proper age; by this means there is now plenty of the red birds upon the latter nobleman's estate near Orford in Suffolk. They did not breed numerously at St. Osyth (Lord Rochford's), the soil was not so favourable; yet even here they increased, and now and then a covey of them was found some miles from his lordship's domain. Mr. Daniel tells us that he, "in 1777, found within two miles of Colchester a covey of fourteen; they were in a very thick piece of turnips, and for half an hour baffled the exertions of a brace of good pointers to make them take wing, and the first which did so immediately perched on the hedge, and was shot in that situation, without its being known what bird it was; a leash more was at length sprung from the turnips and shot; and, two days after, a brace more of them was killed by another person. From that time until November, 1799, he never shot one; he was then out at Sudbourn, with a gentleman, who was particularly anxious to kill some of these red partridges, and hunted with a brace of capital pointers for them only; the instant the dogs stood the red birds ran, and always took wing (notwithstanding all the speed exerted to head them) at such distances as to be out of the range of the shot from any fowling-piece. Upon the same grounds, and on the same day, they laid until the springing spaniels (with which the compiler was shooting) almost touched them before they arose, and in a short time he killed two brace and a half. Whether the questing of the spaniels caught their attention (having never before been attacked in that mode), or that, from being frequently found by pointers, they perceived and immediately ran from their enemy as the dog became stationary, the gamekeepers, who knew their habits and were not a little surprised at seeing the circumstance, could not determine. They have one peculiarity, that, when wounded, they will go to ground in the rabbit burrows." (*Rural Sports*, vol. iii. p. 195.) We have seen enough of these birds to justify us in asserting that, as a table guest, they are greatly inferior to our native partridge, and equally so for their sporting qualities in the field. They are everlasting runners, never lie well, and seldom rise within gun-shot. We believe they are or were in great plenty on Mr. Vernon's manor at Aldborough, and at Lord Huntingfield's, Heveningham Hall. They are, in fact, sprinkled about in many places, rather for ornament than use; however, as perchers, they vary the sporting scenes. When we were in France we saw plenty in the market, but we do not remember having seen them either perched or on the ground in all our travels there. Indeed, we would appeal to our countrymen generally, travelling through France on any of the great roads of communication with the capital, whether they were not struck with the almost total absence of animals. It is true that even human passengers are not in general very thickly spread on the roads as with us; but who has had the felicity here to see a covey of partridges skim over the road from one side to the other? Even a rabbit is a rare sight; and we never saw a living hare, although they were to be obtained in the market, together with poultry

and game, in plenty. It is the general dulness of the prospect to the sportsman who sees so few animals in his journeyings, that we complain of; therefore the sportsman, at least, can contradict the saying, "That they manage these things better in France."

SUBJECT. 8. *The Natural and Sporting History of the Quail.*

2630. *The quail (Tetrao Coturnix Linn. fig. 413.)*, according to Montague, "is about seven inches and a half in length; bill dusky; irides hazel, in old male birds yellow: the



crown of the head is black, transversely marked with rufous brown, down the middle is a yellowish white line; above the eye, passing backwards, is another line of the same colour; on the chin and throat is a black mark, which turns upwards to the ears; the rest of those parts are white; the hind part of the neck black; scapulars and tail-coverts are rufous brown, the middle of each feather streaked with yellowish white, surrounded more or less with black; sides the same, but have not so much of the white streaks; breast light ferruginous brown; shafts white; belly paler; wing-coverts pale rufous

brown, streaked like the back, but more minutely; quills dusky, the outer webs more or less mottled with yellowish white; tail dusky, tipped with white, and consists of twelve short feathers hid by the coverts." (*Ornithological Dictionary*, p. 394.) The hen bird is distinguished by having little or no black on the chin or throat, a dusky mark passes from the ears downwards; some dark spots also are seen on the chest, and the coverts of the wings are barred with yellowish white streaks. The quail is a bird of almost universal distribution: it is, however, said not to be known in America. Its great resemblance in figure, colour, and habits, have gained for it with some the name of the dwarf partridge. "These birds," says Mr. Daniel, "resemble each other by being both pulverulent, having short wings and tail, and running very swiftly; they feed, copulate, build their nest, and raise their young, nearly in the same way; both are salacious, inordinately lustful, and the males quarrelsome: but, numerous as are the points of resemblance, they are more than balanced by a number of disparities, which render quails a distinct species; for, omitting the peculiar incident of their migration, quails are universally smaller; they have not the bare space between the eyes, nor the figure of the horse-shoe impressed on the breast of the males, as in the partridge; the quails' eggs are smaller, and of an entirely different colour; their notes are unlike; the flesh of the quail is also of a different flavour, and more loaded with fat; the period of their life is shorter, for the quail does not live more than five years. They are less cunning than the partridge, and much more easily ensnared, especially when young; their dispositions are not so gentle; and it is extremely rare to see them tamed. Quails seldom form themselves into coveys, except when their wants unite the feeble family to their mother, or some powerful cause urges at once the whole species to assemble, and traverse together the extent of the ocean, holding their course to the same distant land; but this forced association does not subsist after they have alighted, and find in their adopted country that they can live at will. The appetite of love is the only tie, and even this is momentary; so soon as passion has spent its force, the male abandons his mate to the labour of raising the family: the young quails are hardly full grown when they separate; or, if kept together, fight obstinately, and their quarrels are terminated only by their mutual destruction." (*Rural Sports*, vol. iii. p. 189.) In many parts of Europe their increase is extraordinary: in Britain, England, Wales, and Scotland, their number is very limited; we have, however, met with them in greater numbers in Ireland than elsewhere. In the neighbourhood of Drogheda we used to find them very frequently; indeed, we were accustomed to say, it was only to look over a hedge or a stone wall, and to find the plant hellebore there, to be certain of finding one or more quails; but this plenty was not constant but sessional only.

2631. *The quail is essentially migratory*; so much so, that those that have been home-reared and kept in confinement for years, nevertheless retain the instinctive desire to migrate; and as the feverish excitement which denotes it is usually exhibited in the evening, it has given rise to a very probable conjecture, that they journey by night. Pliny bears evidence to this:—"They alight," he says, "in such numbers on ships (and which is always in the night), by their settling on the masts, sails, &c. as to bear down barks and small vessels, and finally sink them, and on that account the sailors have a great dread of

them when they approach near the land." In the autumn immense flocks cross the Mediterranean from Italy to Africa, alighting as well when they go as when they return on the numerous islands of the Archipelago, in such numbers as almost to cover the country. In Alexandria the supply is so great, that we are told that they may be bought at the rate of a farthing each. The crews of the merchant vessels have, in some instances, been so fed on them as to occasion complaints to be made at the consul's at Alexandria, that they were the only food allowed them. Quails assemble in autumn in the northern shores to emigrate southward; and it is observed that they delay their departure until a north wind arises, when towards sunset the whole body take wing, and are so expeditious that they traverse fifty leagues by break of day. Sir William Jardine tells us that, "On the coast of Italy and Sicily, and all the Greek islands, they arrive at certain seasons in immense numbers. A hundred thousand are said to have been taken in one day. They are run after during the flight like the passenger-pigeon of America, and a harvest is gathered when the numbers are greatest. In Sicily crowds of all ages and degrees assemble on the shore. The number of boats is even greater; and enviable is the lot of the idle apprentice, who, with a borrowed musket or pistol, no matter how unsafe, has gained possession of the farthest rock, where there is but room for himself and dog, which he has fed with bread only all the year round for these delightful days, and which sits in as happy expectation as himself for the arrival of the quails. Ortygia was named from them; and so abundant were they on Cupri, an island at the entrance of the Gulf of Naples, that they formed the principal revenue of the bishop of the island. From twelve to sixty thousand were annually taken; and one year the capture amounted to one hundred and sixty thousand. In China, and in many of the eastern islands and Malacca, they are also very abundant, performing regular migrations from the interior to the coast." (*Naturalist's Library*, ORNITHOLOGY, vol. iv. p. 97.)

2632. *The fighting propensities of the quail have immortalised him.* Henry the Third, king of Castile (as reported of him by Mariane the Jesuit, lib. iii. cap. 7.), was much taken up with catching of quails, as we suppose for the purpose of matching them to fight, and also as well to pursue them as a sport; for we are told that the Castilians hunted them morning and evening. Scaliger likewise reports that the Italians have gardens purposely to hunt them in, and which gardens are fitted up at great cost, and where, with their quail-pipes, they pursue the quail as a great amusement. Tycho Brahe even, with all his gravity, would seem to have been a lover of this diversion, as well as of fishing. Indeed, innumerable ancient and modern records bear testimony to the native pugnacity of the male quail. The Athenians esteemed a quail fight among their highest treats: the Chinese also encourage pitched battles among them, after the method of our cock fightings, and large stakes are lost and won on the battles. The Afghans to this day, as we are informed, spend much of their time in matching their quails against each other; and so pugnaciously inclined is this bird, that it is but seldom that he is not as ready to fight as the Afghans are to look on. The Greeks and Romans were great quail fighters, and a known conqueror was very highly prized. Nay, in such estimation was one held which had thus signalled himself, that Augustus is said to have put to death a prefect of Egypt, who had such a conqueror brought to his table to be eaten. Burnes, in his *Travels in Bokhara*, tells us that he "arrived at the season of the quails, when every one who could escape from his other avocations was engaged in hawking, netting, or fighting, these courageous little birds. Every Tuesday morning the chief had a meeting in his court-yard to encourage this sport. He used to send for us to witness it: it is by no means destitute of amusement, whether we regard the men or the birds; for chief, servant, and subject, were here on an equality, the quails being the heroes not the men. They are carried about in bags, and enticed to fight with each other for grain, which is sprinkled between them. When the quail once runs he is worthless and immediately slain, but they seldom made a precipitate retreat. Nothing can exceed the passion of the Afghans for this kind of sport; almost every boy in the street may be seen with a quail in his hand, and crowds assemble in all parts of the city to witness their game battles." Ere we conclude, it cannot be inconsistent with our account of the natural history of the quail, to notice its habits in every quarter of the globe. In India these birds are very abundant, and are much prized, not only for their edible but also for their pugnacious qualities, consequently they are entrapped, by various methods, by the shecarries among the Hindoos. Johnson tells us in his *Indian Field Sports*, that these people "equip themselves with a frame-work of split bamboos, resembling the frame of a paper kite, the shape of the top of a coffin, and the height of a man, to which green bushes are fastened, leaving two loop-holes to see through, and one lower down for their rod to be inserted through. This frame-work, which is very light, they fasten before them when they are in the act of catching birds, by which means they have both hands at liberty, and are completely concealed from the view of the birds. The rod which they use is about twenty-four feet long, resembling a fishing-rod, the parts are inserted within one another, and the whole contained within a walking-stick. They also carry with them horse-hair nooses of different sizes and strength, which they

fasten to the rod; likewise birdlime, and a variety of calls for the different kinds of birds, with which they imitate them to the greatest nicety. They take with them likewise two lines, to which horse-hair nooses are attached for catching larger birds, and a bag or net to carry their game. Thus equipped, they sally forth; and as they proceed through the different covers they use calls for such birds as generally resort there, which from constant practice is well known to them, and if any birds answer their call they prepare accordingly for catching them: supposing it to be a bevy of quail, they continue calling them, until they get quite close; they then arm the top of their rod with a feather smeared with birdlime, and pass it through the loop-hole in their frame of ambush, and to which they continue adding other parts, until they have five or six out, which they use with great dexterity, and touch one of the quails with the feather which adheres to them; they then withdraw the rod, arm it again, and touch three or four more in the same manner before they attempt to secure any of them." (P. 21.)

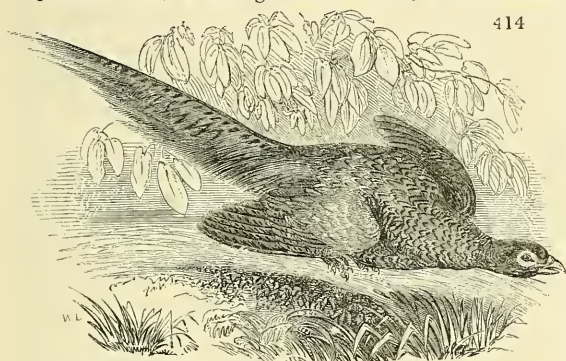
2633. *Quail shooting.* We have already stated that the principal English quail shooting we have seen has been in Essex, but that we saw still more of it in Ireland; in which latter country this bird is far more common than with us. As in England, so in Ireland also, the principal flight arrives in the spring, but some few remain in both countries the whole year, and a few breed in them likewise. In England they appear to have no fixed places of residence, yet are certainly more usually met with in those localities which border the sea than in any others; thus in Kent, in the Isle of Thanet, and on the whole of the Essex coast, as well as in Cambridgeshire, we have met with them occasionally. In Suffolk and Norfolk they are likewise now and then found in the same covers as partridges, *i. e.* cornfields, coleworts, gorse, or furze. During the month of May, which hails their appearance from the opposite coast, they may be sometimes met within any of those localities. When we resided in Essex, we every now and then dropped suddenly on one, two, or more, in the corn patches throughout the Thurstable Hundred, and occasionally in the St. Osyth Marshes; but the occurrence was rare. The beves we met with in most English localities have seldom exceeded seven or eight, and, when a large number appeared, we had reason to believe that the adventitious birds were the remains of another bevy, the old birds belonging to which had been shot off. This packing of quails, we have reason to think, is not unusual; and as the period we refer to was more than thirty years ago, when quails, although never abundant, were more plentiful than at present, so it increased our opportunities of observing their habits and habitations. Mr. Daniel however, who resided in the same neighbourhood with ourselves, but much longer, says of them, "With us they are birds of passage, some entirely quitting our island, others shifting their quarters, as it is said, from the neighbouring inland countries into the Hundreds of Essex, in October, where they continue all the winter. If frost or snow drive them out of the stubble fields and marshes they retreat to the seaside, shelter themselves among the weeds, and live upon what they can pick up from the *algæ*, &c. between high and low water-mark: their appearance in Essex coincides with that of their leaving the inland counties; and this same observation has been made in Hampshire. The quail, like the partridge, makes no nest, except a few dry leaves or stalks scraped together may be so called, and sometimes a mere hollow in the bare ground suffices; in this the female lays six or seven eggs of a whitish colour, marked with irregular rust coloured spots. Mr. Holland, of Conway, once found a nest with twelve eggs, eleven of which were hatched; and the compiler of this account has seen a bevy of nine young ones." (Vol. iii. p. 195.)

In France and Italy they lay from fifteen to twenty eggs, and in still warmer climes the number may be even greater; indeed, we know they do lay even more than this number, and this prolific increase can alone account for the almost incredible numbers to be met with which we read of. As some sportsmen profess to have seen young beves of quails in September we conclude, that these were the produce of a second hatch, which will still further illustrate how prolific they are. A very interesting, and almost an isolated, account of the quail and its habits, including also the means of sporting for it, may be met with in the *New Sporting Magazine*, No. xxv. vol. v.; and we would recommend the reader's attention to it, not only as bearing us out in our statements, but likewise as increasing some of the points of information we have offered. The Isle of Thanet the writer particularises as a favourite resort of quail; and that at all times, he tells us, they may be found there. "This place was formerly so famous for them, either from its vicinity to the French shore, or the quantity of grain which is cultivated, that people came from great distances for the express purpose of quail shooting; of late years, however, their numbers have considerably decreased, but still the sportsman, in the beginning of September, may commonly kill from two to three brace a day. Along the banks of the Thames, below Purfleet, several farmers and sportsmen have assured me, that about the beginning of November, a time at which the departure of the main body has taken place, a small number of quails make their appearance and continue during the winter, always at a short distance from the river's edge; these are evidently the young birds of the second bevy, who, for some reason, seek that particular situation after the migration of the rest of

their species." (P. 27.) We also agree with him, that the quail is far from being without scent; our own dogs, whenever we met with them, have challenged them continually, and stood to them staunchly. We have always met with them, with most certainty, when we were early out, and most frequently they were to be found in stubbles, occasionally only they were met with in the long grass of the country hunted; but we more often found them in their evening feed in the cornfields, when we were on the look-out for partridges. They form rather an unpleasant game to follow, and indeed ought never to be hunted but with a thoroughly steady dog, and the older the better, so very irregular are they in their habits, at one time lying like stones, and at another running like lapwings. As we usually came upon them unexpectedly, so we used to kill them with common partridge shot; but where the sportsman is on the look-out for them only, we would recommend that he does not use a higher number than seven.

SUBJECT. 9. *The Natural History of the Pheasant.*

2634. *The pheasant genus owns in particular two sporting varieties naturalised amongst us, and some others which are kept in a state of confinement in our menageries. We shall not bewilder our readers with the nice distinctions and restrictions of naturalists with regard to their station; suffice it to say, that it is now agreed by them that it ought to be separated from the gallinaceous tribes with which it was so long connected in ornithological descriptions. Be it however understood, that we have two distinct sporting varieties of the pheasant. One, rather larger than the other, is the Phasianus Colchicus Linn. (fig. 414.),*



THE PHEASANT.

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which it will be seen is not collared like the small or ring necked pheasant, *Phasianus Torquatus* of Temminck. Both however interbreed, which might lead to a supposition, that accident more than design had occasioned this variation between them, were it not that the difference observed in their relative sizes still remains with the progeny of each. In a sporting point of view the pheasant is very important to the lovers of shooting. The naturalist also admires it

for its beauty, and is particularly interested by a consideration of its extensive geographical distribution; nor can look, but with some surprise, at the ease with which it becomes naturalised in a country opposed in so many particulars, as is our portion of the globe, to its early birth-place. We shall therefore, as we hope, stand excused by our readers of all classes, if we dilate somewhat more than is our usual custom on the natural history of these objects of general regard and admiration. Although the genus *Phasianus* is now restricted by modern naturalists, it nevertheless contains other splendid varieties besides those already hinted at, two of which are frequently met with among us in aviaries. One from the south of China, known as the golden pheasant, and by Mr. Swainson called *Nycthemerus Pictus*, figured at p. 20. is a beautiful example, and not uncommon in our aviaries, where it is fed with grain in varieties, as rice, hemp, wheat, and, as we should recommend, Indian spices produced in pods. It likewise eats vegetables of various kinds, aromatic herbs, fruits, raw and preserved, and insects in vast quantities, the want of which cuts off very many of them. The other variety is the silver pheasant, *Nycthemerus Argentatus*, which, if less showy than the last, is to the full as elegant, and has been longer domesticated in our aviaries. It is more hardy than the golden pheasant, being a native of the north of China, and may be brought to propagate here with little trouble, so that without doubt we shall yet see it ranging the open country with our common pheasants. It makes its nest in April, and lays from eight to fourteen eggs, which are of a reddish yellow, varied with white, and sprinkled with small brown spots. Mr. Swainson tells us their young are hatched in twenty-six days. Mr. Castang, however, enumerates six different varieties of pheasant, exclusive of the common: as the gold, the silver, the ring-necks, the white, the pied, and the Bohemian; but some of these are as strictly exotic.

2635. *The common pheasant* is described by Bewick as being "two feet eleven inches in length. The bill is of a pale horn colour; the nostrils are hid under an arched covering; eyes yellow, and surrounded by a space, in appearance like scarlet cloth finely spotted with black; immediately under each eye is a small patch of short feathers of a dark glossy purple; the

upper parts of the head and neck are deep purple, varying to glossy green and blue; lower parts of the neck and the breast reddish chesnut, with black indented edges; the sides and lower part of the breast the same, with pretty large tips of black to each feather, which in different lights vary to a glossy purple; the belly and vent are dusky; back and scapulars beautifully variegated with black and white, or cream colour speckled with black, and mixed with deep orange, all the feathers edged with black; on the lower part of the back is a mixture of green; the quills are dusky, freckled with white; wing-coverts brown, glossed with green, and edged with white; rump plain reddish brown; the two middle feathers of the tail are about twenty inches long, the shortest on each side less than five, of a reddish brown, marked with transverse bars of black; legs dusky, with a short blunt spur on each, but in some old birds the spurs are as sharp as needles; between the toes there is a strong membrane. The female is less, and does not exhibit that variety and brilliancy of plumage which distinguish the male: the general colours are light and dark brown, mixed with black, the breast and belly finely freckled with small black spots on a light ground; the tail is short and barred somewhat like that of the male; the space round the eye is covered with feathers. In many gentlemen's woods there is a kind as white as snow, which will intermix with the common pheasant. The common pheasant, however, is the only one of its kind that has multiplied freely in our island. Pheasants are generally found in low woody places, on the borders of plains where they delight to sport; during the night they roost on the branches of trees. They are very shy birds, and do not associate much together, except during the months of March and April, when the male seeks the female; they are then easily discoverable by the noise which they make in crowing and clapping their wings, which may be heard at a considerable distance. The hen makes her nest on the ground like the partridge, and lays from twelve to fifteen olive coloured eggs, which are smaller than those of the domestic hen; the young follow the mother as soon as they are freed from the shell. During the breeding season the cock pheasant will sometimes intermix with our common hen, and produce a hybrid breed, of which we have known several instances." (*British Birds*, vol. i. p. 321.)

2636. "It is now generally admitted," says Sir William Jardine, "that the pheasant was originally introduced into Europe from the banks of the Phasis (now the Rioni), a river in Calchis, in Asia Minor. The Greeks, in the ascent of the stream, were attracted by their beauty; and the bird being so easily domesticated, a valuable addition to the luxury of themselves and the Romans was soon secured, and rapidly extended itself over the southern countries of Europe. They appeared at the expensive and superabundant repasts of the ancients, and for a time bore the palm for novelty; and Heliogabalus in his ostentation is said to have fed the lions of his menagerie with them. The pheasant may be said to have been originally restricted to the Asiatic continent, extending over the greater part of it, and reaching to China and the confines of Tartary." (*Naturalist's Library*, vol. iii. p. 190.) It is at the present time, however, much more extended; and its hardihood of constitution is such as to fit it for almost every climate. It is abundant in Siberia, and it has some few years since been introduced into North America. The period of its introduction into Britain is not certainly known: "the price they bore," says Mr. Daniel, "according to Echar'd's *History of England*, A. D. 1299 (being 27 Edward I.), was 4*d.*" It should however be remembered, that at this time the value of a mallard was 1½*d.*; a plover, 1*d.*; a couple of woodcocks, 1½*d.*; wheat was sold for 1*s.* 8*d.*, and at some places for 1*s.* 4*d.* per quarter, or 4*s.* of our money. A fat lamb, from Christmas to Shrovetide, 1*s.* 4*d.*, and all the year after 4*d.* Pheasants were not originally inhabitants of America; their wings being short, they are ill adapted for long flights; therefore it is more probable that they have been purposely sent to every place which they now inhabit, than that they came there by chance. This is ascertained by their complete imprisonment in the Isolo Madre, in the Lago Maggiore, at Turin, as they cannot fly over the lake; and, unless picked up by the boatmen, are always drowned when they attempt it. Sonnini relates, that the pheasants of some of the northern islands of the Archipelago, and which come thither from the woods of Thessalia, are larger and handsomer than those of other countries; and that it is an amusement for the rich Turks of Salonica to fly at them birds of prey, which they carry on their fist. "When the pheasant takes its flight, the bird of prey which they let loose, hovering above, compels it to perch on some tree; he then places himself on another branch over its head, and keeps it in such terror, that it suffers itself to be approached, and easily taken alive. This fact," continues Mons. S., "sufficiently develops the mystery of fascination." (*Rural Sports*, vol. iii. p. 33.)

2637. A gastronomic hint of Mr. Daniel cannot be passed over. "These birds," he says, "are no less salutary than beautiful. When the ancient physicians spoke of the wholesomeness of any viands, they made their comparison with the pheasant. The hens are certainly more juicy, and every way preferable; still the real sportsman feels a twinge whenever he sees a hen pheasant destroyed. They are best roasted, and the most eligible mode of dressing an old cock is (after being kept a proper time) to stuff him with the lean of the inside of a sirloin of beef cut into pieces the size of dice and well-seasoned; the

gravy issuing from the beef gradually diffuses itself through the flesh, and renders it less dry and hard than when destitute of this supply." (*Ibid.* p. 35.)

2638. *The ring necked pheasant* is not, as Bewick would seem to insinuate, a mere variety of the common kind; but is an individual breed, native to China. It however associates with the common pheasant? But whether or not it breeds with it, is a question not yet decisively settled. Bewick's description of this bird is, that the only difference between it and the common pheasant consists in its white ring. But it is necessary to state, that correct as Bewick usually is, he is at variance, in this instance, with some modern authorities, who aver that these varieties do not interbreed. Were that the case, we should see half-collared, part-collared, and, indeed, an endless variety of markings, which Bewick, however, says he has seen. We hope this subject will yet occupy the full attention of experimentalists. Let us refer to Sir William Jardine. "The ringed pheasant," he says, "chiefly inhabits the forests of China, where the common species is also abundant; but in this natural state they never breed together. The eggs of the ringed bird also differ,—they are of a pale bluish green, marked with small blotches of a deeper tint; while those of the common pheasant are of an olive white, and without any spots. The ringed pheasant in its wild state is always of a lesser size; the extreme length never exceeding two feet five inches, and the tail itself is much shorter in proportion to the body. The head is of a whitish fawn colour, tinted with bluish green; and above each eye there are two white lines, forming a sort of eyebrow. The markings on the back are different and smaller, and the rump feathers show the same peculiar tint which the mixture of fawn and greenish blue exhibits: and, lastly, the white ring is broadest upon the sides of the neck, which is a mark which never can be mistaken. The female also differs in her lesser size and comparative length of the tail. The ground colour of the plumage is brown. There are no dark spots upon the breast, and the barring of the tail is very distinctly marked; but what Temminck has observed to be the principal distinction in the female is, a little band of thick and black feathers, which runs a short way under each eye, and which he thinks is wanting in the other." (*Naturalist's Library*, vol. iii. p. 193.) The complete individuality of either the common or the ring-necked pheasant is, nevertheless, not completely established, since we find Sir William Jardine thus continuing the subject:—"The pheasant sometimes also crosses with the domestic fowl. Temminck mentions this as requiring great attention to accomplish; but where poultry is kept upon the borders of a wood abounding with pheasants, it occasionally happens, and would do so perhaps more frequently, if favourable opportunities occurred; a specimen in our own possession, exhibiting all the mixed characters, was procured in a wild state. M. Temminck also records a solitary instance of a mule between the female common pheasant and male golden pheasant, which exhibited a curious but splendid mixture; all his endeavours, however, to procure a second specimen were ineffectual. The common pheasant breeds, also, freely with the ringed bird, and the offspring is productive. This has been considered by many as a proof that these two birds were identical; but in the whole of this order, and its corresponding one among quadrupeds, this law has a much more extended modification, and can scarcely be taken as a criterion, except in very opposite instances." (*Loc. cit.* p. 198.) Time however, and more extended experimental inquiry, will eventually settle the question; which, though important to the naturalist, is not so much so to the sportsman.

2639. *The preservation and increase of pheasants* are in many points of view important considerations with all sportsmen, all holders of manors, and indeed with the public at large; but the natural antipathy these birds evince to become domesticated like others of the gallinaceous fowls, has tended much to prevent their increase, and even to lessen their numbers. Were the pheasants, like the turkeys, to be so domesticated that they could be housed at night, and driven out by hundreds to feed in the morning, their number might be unlimited. But the spirit of independence in this race, unless long domesticated, is such, that under any restraint neither will the hen lay her usual proportion of eggs, nor attend to her young when hatched; and hence it is that the eggs are usually consigned over to the common hen. Mr. Waterton of Walton Hall (than whom few are more deeply read in Nature's works) offers on this subject some interesting remarks:—"Notwithstanding," he says, "the proximity of the pheasant to the nature of the barn-door fowl, still it has that within it which baffles every attempt on our part to render its domestication complete. What I allude to is a most singular innate timidity, which never fails to show itself on the sudden and abrupt appearance of an object. I spent some months in trying to overcome this timorous propensity in the pheasant, but I failed completely in the attempt. The young birds, which had been hatched under a domestic hen soon became very tame, and would even receive food from the hand, when it was offered cautiously to them. They would fly up to the window, and would feed in company with the common poultry. But if any body approached them unawares, off they went to the nearest cover with surprising velocity. They remained in it till all was quiet, and then returned with their usual confidence. Two of them lost their lives in the water by the unexpected appearance of a pointer, while the barn-door fowls seemed scarcely to notice the appearance. The rest took finally to the woods,

at the commencement of the breeding season. This particular kind of timidity, which does not appear in our domestic fowls, seems to me to oppose the only, though at the same time an insurmountable, bar to our final triumph over the pheasant. After attentive observation, I can perceive nothing else in the habits of the bird to serve as a clue by which we may be enabled to trace the cause of failure in the many attempts which have been made to invite it to breed in our yards, and retire to rest with the barn-door fowl and turkey. Though a preserve of pheasants is an unpopular thing, still I am satisfied, in my own mind, that the bird cannot exist in this country without one. At the same time, I am aware that a preserve may be overdone. Thus, when pheasants are reserved for a day of slaughter, under the appellation of a *battue*, the regular supply of the market is endangered, and the diversion has the appearance of cruelty, and no good end seems to be answered. It exposes the preserves of pheasants, in general, to the animadversions of an angry press, which are greedily read, and long remembered, by those whose situation in life precludes them from joining in the supposed diversion. However ardently I may wish to protect the pheasant in an ornithological point of view — I say ornithological, for its flesh I heed not — still, I am fully aware that the danger to be incurred, and the odium to be borne, are mighty objections. We read, that the ancients sacrificed a cock to Æsculapius: perhaps the day is at no great distance, when it will be considered an indispensable act of prudence, for the country gentleman to offer up his last hecatomb of pheasants at the shrine of public opinion. The more we look into the habits of the pheasant, the more we must be persuaded that much more attention ought to be paid to it than is generally paid to other kinds of game. The never-failing morning and evening notice which it gives of its place of retreat, together with its superior size, cause it to be soon detected and easily killed. The tax, too, which government has put upon it, enhances its value as an indispensable delicacy at the tables of those who give good cheer. In fact, few are the autumnal and winter dinners of the wealthy where a roasted pheasant does not grace the second course.

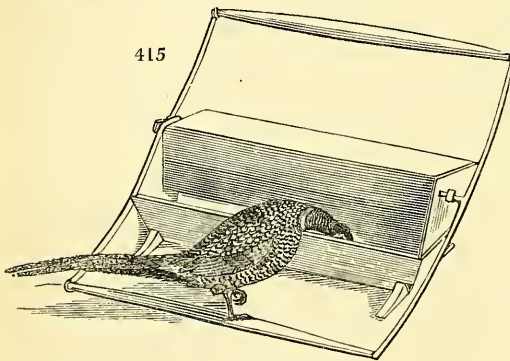
“The poacher’s means for the destruction of pheasants are various. The report of a gun, or a clap of thunder, during the night, will often cause the pheasant to begin to crow, as I have already stated; and this greatly endangers their safety. When once they are frightened from their roost, they never perch again during the remainder of the night, but take refuge among the grass, and underneath the hedges, where they fall an easy prey to the cat, the fox, and the stoat. A poacher, armed with a gun, finds a cloudy night fully as good for slaughter as one in which the moon shines; and, if larch trees grow in the wood, to these he resorts, knowing, by experience, that the pheasant prefers this kind of tree to any other. The larch suits pheasants admirably, on account of its branches growing nearly at right angles from the stem: this renders the sitting position of the birds very easy. I consider the smoking of pheasants, while they are roosting in a tree, as a mere idle story. I myself ought to be a pretty good hand at poaching; still, I am obliged to confess that I have never been successful, in one single instance, in the many attempts I have made to bring down the pheasant from his roost by the application of a smoking apparatus. Indeed, when we reflect that the mouth of the bird is always shut during sleep, and that both it and the nostrils are buried in the dorsal feathers, we are at a loss to conceive how the smoke can enter them, and cause the bird to fall in stupefaction. If smoking were a successful method, depend upon it the poachers would never be such noodles as to use a gun, the report of which is sure to bring an attentive keeper up to the scene of their night’s diversion.” (P. 309.) We hope to stand excused for making so long an extract, but we consider the importance of the subject, and the high character of the author required it. Nor are we well pleased that our limits will not allow us to give the whole of the account connected with the increase and protection of this favourite bird, but which may be met with at large in London’s *Magazine of Natural History*, vol. vi. p. 308., a reference to which we pledge ourselves will repay the reader’s trouble. We would likewise strongly recommend Mowbray’s *Treatise on Breeding and Rearing Domestic Poultry* for a very judicious code of instructions on the breeding and rearing of pheasants, in which it seems the author was much assisted by Mr. Castang, formerly proprietor of the well-known menagerie in the New-road, whose long acquaintance with the subject must have greatly enhanced the value of the information he gave. It is in the spirit of approval of the labours of Mr. John Lawrence, that we would propose to him that, in the next edition of this useful manual, he should drop the soubriquet of Mowbray, its own sterling merit being such, that its real author need not be ashamed of such a bantling, and the encouragement of the public being also such, that they deserve to know to whom they are so much indebted. Mr. Daniel likewise, in his *Rural Sports*, enters very fully into the methods of breeding and rearing pheasants, both by natural and artificial means, as will be seen by a reference to that useful and amusing work. We may take this opportunity of remarking on the aptitude observed in the gallinaceous birds to destroy and, as it appears, to devour serpents and other venomous reptiles. The Hon. and Rev. Charles Bathurst (to whom we also are indebted for some valuable communications) in a letter to Dr. Chalmers writes, “Lord Bathurst’s park, &c. is two miles from this place (Siddington, near Cirencester), and in his woods, near the keeper’s house, peacocks,

are kept as ornaments to the wild scenery, but not, as far as I have ever heard, or even since reading your paper been able to learn, for the purpose of destroying serpents. I do not make out that they are esteemed in *this* part of the country the natural enemy of the serpent tribe; neither do I see, in any of the works of natural history which I have consulted since reading your article, that this peculiarity has been noticed. Among ancient naturalists, Aristotle and Pliny say not a word on that subject: Buffon and Bewick, you say, do not mention this peculiarity, so I have not consulted them; but I have looked into Goldsmith and Blumenbach, but find it not there either. However, it may not be uninteresting to you, as in a great measure connected with your subject, to mention a circumstance which recently came to my knowledge:—My friend Sir John Ogilvy, who has lately been staying with us, told me that last year, when riding to Hahnaker Park in Sussex, he saw a pheasant with a long thin substance in its beak, and, upon his making towards the bird, he flew off and dropped his prey, which turned out to be a slowworm, or blindworm (*Anguis fragilis*). The pheasant has by this anecdote been proved to prey on serpents; and if it be true of the pheasant, why should it not be true of the peacock, for they are both species of the same order, *Gallinæ*?" (*Magazine of Natural History*, vol. vii. p. 152.) We may also add from the same source, that the attention of the late Mr. Sykes (M. P. for Hull) being attracted to the efforts of a peacock to break the glass frame which covered a hot-bed, he removed it, when the peacock instantly leaped into the bed, and scratching away some of the manure exposed to view a nest of young serpents, all of which the peacock, with a little assistance, instantly killed and devoured. We hope these and other notices which have appeared on the instinctive warfare which the gallinaceous birds generally make on serpents, as well as on many other noxious animals, will gain them the good opinion and humane protection of the sportsman against any unnecessary cruelty committed on them during his lawful pursuit of these birds. The pheasant occasionally grows to a very great size: Mr. Daniel notices one in 1810, near Whitehaven, which weighed fifty-six ounces, and measured from bill to tail one yard five inches. Mr. Missing of Titchfield, Hants, killed on the estate of John Fleming, Esq. (M. P. for that county) November 23d, 1827, one which weighed three pounds nine ounces, and measured from one extremity to the other three feet ten inches.

2640. *The multiplication and preservation of pheasants.* It is fit that, ere we enter on our instructions how to destroy these birds in the most sporting like manner, that we meet the threatened waste, by offering information on the most effective methods of breeding and rearing them. Instructions for this purpose may be met with in Mowbray's excellent work already noticed, and there are many professed breeders of pheasants in several of our midland counties, as Herts and Bucks, who are ready to supply them when wanted. Every gamekeeper also ought to know where to procure eggs, and how to hatch them in such numbers, that even the severest battue, or the most deadly epidemic, shall not wholly destroy them. Mr. Barker Daniel also treats on this subject with his accustomed perspicacity, and his very active mind and sporting habits led him not only to write, but likewise to experiment, on the matter. We believe that few, if any, of the gentlemen in the county he lived in could excel him in whatever he undertook connected with field sports; he not only reared his pheasants, but broke his sporting dogs of every description himself. We know his spaniels, in particular, were equal if not superior to any others in Essex, or in any of the surrounding counties where they had been hunted under competition. Mr. Daniel himself allows that they were so very excellent, that he was once desired to fix his own price upon six brace and a half, after being offered 150 guineas for them. He had, for many years previously, purchased at various times at least four score spaniels, all with excellent characters; but which, with the exception of four brace, were regularly consigned to the *halter* for incorrigible hare hunting; nor would he ever have succeeded to his wish, but by procuring Mr. Hoare's breed, after that gentleman's decease; in possession of which, and by attention to obtain any cross that could improve them, he at length effected his object. Amidst a great abundance of hares in all the manors he preserved, he had at one time in his possession six brace of spaniels that would not, individually or collectively, run a hare thirty yards: it will readily be supposed that, with such dogs, he could not fail of finding all the game that any covert contained; he seldom lost a wounded bird, nor (unless in the pursuit of a winged pheasant, when they sometimes laid hold of his tail feathers, which, from his rapid running, he left in their mouths) did his spaniels ever break or rumple their game. (Vol. iii. p. 68.) As we knew this gentleman personally from his visiting us at Tollesbury Lodge, and also from often meeting with him in company, we are prepared to speak of him as a well-bred gentleman, and so universal a sportsman, that he excelled in almost all field sportings. "The Rev. William Barker Daniel," says Mr. John Lawrence (who was both his countryman and townsman, and, as it seems, knew him and his family intimately) "was an Essex man. He was a nephew of Lady Barker, the reputed *chère amie* of the Culloden Duke of Cumberland. The deceased had originally a sufficient estate, and resided in his native county, until either imprudence or misfortune located and fixed him in *banco regis* for the remainder of his life, a term extending, as I recollect, to about forty years. His age was probably given somewhat incorrectly in the newspapers: I think it must have

extended several years beyond fourscore." Of his *Rural Sports* we need say no more than that the work has been abused by many who copied from it; and has been lauded, as it justly deserves to be, by all impartial critics. It had its errors, without doubt, as every work has; let him therefore, in whose writings no error can be found, let him, and him only, wag a tongue, or pen to dispraise. We apprehend that Mr. Lawrence considerably overrates the period of this gentleman's confinement, but, without doubt, unintentionally.

2641. *In attempting to raise a stock of pheasants*, as much as possible study their tastes and aptitudes. "They show," Mr Daniel very justly says, "a great preference to certain localities, among which aldercars, willow-garths, saltings, or marshes close to the sea, or cliffs with any furze or cover in them, and which join the salt water; for, like pigeons, they are great lovers of salt. If in such natural advantages of situation they are more-over tempted to continue by a regular supply, during winter, of their favourite food, they will soon be as plentiful as can fairly be desired; and will prove that the character ascribed to the pheasant, of being a determined rambler, is void of all truth. Doubtless driving a covert thrice a week with a team of spaniels, as noisy and numerous as a pack of hounds, will be sufficient to induce any animal, possessing the ability, to shift its quarters; but where a pheasant can obtain food and enjoy quiet, he is of too indolent a nature to be flitting through a country in search of adventures. It has been contended, that pheasants are always shy, and difficult to be tamed. I have had them (he says) pinioned, and let run with the common poultry; and they were equally domesticated; and some, hatched under hens, remained in or about the garden until the spring following, and then probably bred at no great distance. During one winter a brace of cocks and leash of hens, so fostered, regularly perched upon trees not five yards from the bed-room windows; and these birds in the daytime would take bread out of the hand that offered it. But without having recourse to instances where the *will* was restrained, and the natural dread of man counter-acted, from the earliest period of their existence, by his appearing almost constantly before their eyes; we can assert the original breeds fed there would immediately come to the keeper's whistle, follow him by scores, and scarcely allow the peas to run from his bag into the troughs before they began to feed; those that could find no peas at one, would attend him with the same familiarity to other troughs, until they obtained room: yet these were birds with all their native wild habits, and hunger alone could not have induced this intercourse, as they were regularly fed twice, and sometimes thrice, a day." (*Loc. cit.* p. 46.) There might also, to this domestic attention of feeding the pheasants by hand, be added the machine known as the *pheasant-feeder* (*fig. 415.*), which, being



PHEASANT-FEEDER.

placed in some convenient but rather retired spot near the keeper's lodge, would not only assist in keeping them together, but might attract any other stray pheasants also to locate themselves, and to breed in these woods. This pheasant-feeder is manufactured both of iron and tin, and may be procured of Messrs. Bailey, 272. High Holborn, and of Mr. Weir, Oxford-street. Mr. Berners, of Woolverston Hall in Suffolk, pursues a novel method of keeping pheasants within some particular covers where they are fed, by placing boys from day-break till dark,

with long sticks, at short distances from each other, by the sides of these covers, who, by the noise they make with their sticks against the bushes, and their talking, effectually deter the birds from approaching the boundaries of the wood where the sentinels are stationed, and from running into the adjoining fields to feed, which happen not to be Mr. Berners' property." The great danger to be apprehended is, that the hens of the adjoining manor will sport their love-call, or invitation, to these their neighbours; for they are well known to love variety.

2642. *The directions for pheasant breeding and rearing*, laid down by numerous writers, of course vary. Mr. Waterton and some other ingenious naturalists have touched on the subject; and notices to this effect, as well as many collateral matters, may be met with in London's *Magazine of Natural History*, to which we would refer the inquirer. Mr. Daniel rests on two plans for breeding these birds, both of which he says may be depended upon. "In a mew," he writes, "the hens will drop many eggs, but they very

rarely dispose them properly in a nest, or sit upon them; the task of incubation being for the most part performed by a common hen (the silk-fowl and bantam are by some kept solely for this purpose). According to Buffon, when first hatched, they should be fed with hard boiled eggs, crumbs of bread, and lettuce leaves, well mixed, with an addition of the eggs of meadow ants. At this tender age two precautions are essential, viz. never to allow them any drink, nor carry them abroad until the dew is entirely off (every kind of humidity being hurtful); and that their food be given frequently, and in small quantities, beginning at day-break, and always mixing it with ants' eggs: the place must be kept extremely clean, and they should be taken in before sunset. In the second month nutriment more substantial may be given, such as eggs of the wood ant, wheat, barley, ground beans, woodlice, earwigs, and other small insects, to make a variety; and the intervals between the meals may be gradually prolonged. At this time they begin to be subject to vermin: place small heaps of dry earth or fine sand, by tumbling and rubbing in which they will soon rid themselves of the painful itching occasioned by them. Water must also now be given frequently, and always clean, else the pip may be contracted; which should be removed as in common chickens, and that then the bill be rubbed with bruised garlic mixed with tar. The third month is attended with new diseases; the tail feathers then drop, and others appear—a sort of critical period to the pheasant as well as the peacock. Eggs given moderately are efficacious in combating the trying complaint, and lessening its danger. The younglings may now be carried, with the crib, into the field, where the colony is to be dispersed: if white clover grows in it the pheasant chicks will pick the seeds out of the heads, and it will wonderfully strengthen them (white clover seed also given when wheat or other grain is used, will prove very nourishing): they must also at first be fed in the field with some favourite food, but never twice in the same spot, and the quantity may be diminished daily; and thus by degrees they will be constrained to provide for themselves, and become acquainted with the country. When able to procure subsistence, they will soon grow as wild as those bred in the woods, with this exception, that they will retain a sort of affection for those spots into which they were first resigned to liberty and nature."

2643. *The second plan is more circumstantial*, and is as well worth the observation of those who accidentally hatch them from eggs mown over in clover, grass, &c. as when obtained from the eggs of pheasants kept on purpose. The same method will also answer for the rearing of partridges. "Have frames seven feet long, and two feet and a half wide, similar in their form to those for cucumbers, and without a bottom; the large end is to be made as a coop for the hen, the bars wide enough for the young pheasants to run from the hen to feed in the frame, which is to be covered with a fine meshed net. If pheasants are kept from which the eggs are to be procured, there should be seven hens to one cock. To forward their laying, give white peas; when they drop their eggs stick them in bran, with the small end downwards, until there are fifteen, which are a sitting for a hen. Get small square boxes, wide enough for the hen to turn in, with covers to hasp down, and holes to admit the air; make a nest of clean wheat straw; every morning take the hens off, and put them under small coops, allowing to each a quarter of an hour to feed and empty themselves; then replace them on the nest until the next morning: when they have set a fortnight, remember to sprinkle the eggs with milk-warm water every morning, just before the hen is put upon the nest, to prevent the eggs being shell-baked; when hatched, let them remain with the hen eight hours to dry; then move them into the coop in the frame, upon gravel, in the eye of the sun; feed them with small ant-eggs; and after a week move the frame upon grass in a warm place. There must be a sliding-board to pen the young with the hen when moved; each frame must have small pans for water, and that for the hen must be fixed to the coop, out of the young birds' reach. Every morning give the young pheasants curd made with new milk; small ant-eggs during the day: at a month's end put a small piece of saffron into their water, and every morning, for each frame, give a good sized toast steeped in chamber-lye, which will keep them free from distemper, and is of the first use in causing easy moulting. Use the young birds to a whistle when fed, which should be four times in the course of the day. When the poults are large, there should be a hole in the small end of the frame to let them out and in, and a sliding-board to pen them in at night, when they are always to be covered with mats. Before the hole is opened in the morning there should be food, such as large ant-eggs, buck-wheat, and other grain, laid near the frame; every day this is to be moved further from it: by so doing they will soon partly learn to take care of themselves, and at the sound of the whistle will come in from all quarters like pigeons: when they gradually disregard the whistle, and at last desert it, they are safe, and capable of providing for their own sustenance and safety." (*Rural Sports*, vol. iii. p. 48—51.)

2644. *Mutations among pheasants*. We hardly need inform the sportsman that Nature appears to the full as fond of sporting as himself. One very remarkable effect which age appears to have on the hen pheasant is, that sometimes at an early period, but more fre-

quently when she altogether ceases to lay, her plumage will assimilate in a greater or less degree with that of the male. The celebrated John Hunter was at much pains to discover whether the internal parts had taken on a similar change; but in the cases met with by him and by many others, ourselves among the number, who had actually examined the bodies, no instance occurred where any organic change had taken place in the generative organs. Neither is this assumption of external male characteristics by age confined to gallinaceous fowls, but extends likewise to many other birds. Pheasants are also apt to be taken with a distemper in their early state, which proves very destructive to them. A correspondent, who signs himself *Vectis* (probably it is H. D. C., whom we know to be a rearer of this bird, and an ingenious experimentalist, Ed.), complains that those he attempts to rear die off suddenly about the time they are throwing off their crop and tail feathers, without any apparent illness, having food in plenty, of which ants and their eggs form a part, they having also air and exercise on the grass-plots, with a daily change of situation. We have known this happen so frequently, that it has called our particular attention to it; and we have observed that the affection complained of usually occurs when great calls are made on the constitution, particularly to furnish the crop and tail feathers, which, as being numerous and massive, require extraordinary powers. In eastern countries pheasants live much on aromatic plants, spice seeds, and other stimulants, which tend to make them so little obnoxious to disease. This consideration should be kept in mind, and should influence all pheasant breeders to give them, at these times particularly, a warming nutritious diet, as chopped eggs, shred beef, and other nutrients. Mr. Castang says, he had rather encounter all the vermin that could beset his menagerie, than this pheasant distemper. He gives alum curd and ants' eggs to combat it, with a frequent change of situation; which, in our opinion, is equally judicious and important. It commands a change of air and a change of food, for it offers many matters that would not otherwise be brought before them. We would recommend, in addition to what is above stated, that pepper pods and other aromatics be enlisted into the service, to increase the vital action of the system. (See some further very useful practical instructions on rearing pheasants at large in the work we have just quoted; see likewise Mr. Loudon's *Agriculture*, p. 1549. where the subject of pheasant breeding is treated on more at length.)

2645. Mortality among pheasants. It may be well to observe, that in some years a great mortality prevails among full grown pheasants also; but as its effects are only seen when remedies are unavailable, we can say little further on it, than that the peculiarities of weather, the preponderance or the scarcity of certain food they incline to, as well as the freedom of their residence from moisture, &c. &c. should all be noted as a future guidance, either to prevent, or cure, or both. To the preservation and increase of pheasants on a sporting domain it is requisite that there should be a keeper's lodge in the centre of every preserve; and that, between the pheasants around and the keeper, a friendly intimacy should be formed, so that at the ringing of a sonorous bell the pheasants may be summoned to be fed. We have, as we believe, already alluded to this arborary location of the keeper, near which the sound of a gun must never be heard, as essential to the preservation of the game on an estate; particularly it is of consequence to the welfare of the pheasants not located immediately around the keeper's lodge, that the means of feeding them likewise should be studied. Besides well thatched small mounds of beans, barley, oats, and buck-wheat, which they are very fond of, and still more so, if from a bean field there be left ungathered a quantity, from which they will not stray far; and if these are objected to, in lieu of them place within the inclosure the ingenious contrivance known as the pheasant-feeder (*fig.* 415. p. 858.) into which put such grain as will, during hard weather, snows, &c. supply food for both pheasants and partridges, although more particularly designed for the pheasant. In very dry seasons water-troughs likewise should be put here and there for the pheasants to drink from. In snows, strew the covers and the adjacent fields with unthrashed corn, having first swept away the snow, which will make the food more conspicuous; but keep an eye over the places, or snares will be set for the birds. Neighbouring pheasants will also be inclined to domesticate where they are best fed. Be likewise careful that your stock is on a fair sexual equality. If you have too many cocks, the hens will seek mates in other manors. Until the older cocks are matched, they will drive the young cocks away; consequently, a sufficient number of hens should remain for their pairing also. The judicious gamekeeper, who is fond of his birds, will be able to form a proper estimate of the relative proportion of the sexes; but as the pheasant is not remarked for his constancy, so if a few more hens than cocks remain on the manor, no great mischief will ensue; and the more, as the cock is not over nice whether he have one or two wives. However, a great disproportion is not desirable, it having been frequently observed, that, where the cocks had been killed off so closely, in such case the hens would seek distant coverts, to the great disappointment of the landowner and his friends. As this invariably happens, it becomes the more imperatively necessary to guard against a wanton destruction of the cocks among pheasants. Thus it is, that on a small manor, not in the immediate vicinity of great preserves, it is prudent to prevent a wanton destruction of the cock birds.

SUBJECT. 10. *Pheasant Shooting.*

PHEASANT SHOOTING.

2646. *Pheasant shooting* (fig. 416.), which commences the 1st of October, bears about it an aristocratic character, that cannot fail of enhancing it in our eyes, although to follow it well up is sufficiently laborious. It is common to consider a pheasant as a very easy bird to kill; and to some, who can mark a penny-piece thrown up nine times out of ten, it may be so; but to most persons it is far otherwise. The professed snap shot frequently reaches him before he is twenty yards off, blows him to pieces, and gets laughed at as he picks up the mangled remains, or as Basto brings a half instead of a whole bird. Many circumstances may tend to set at naught some common notions of the methods employed. One very usual, but by no means a good conclusion, is, that pheasant shooters ought to employ spaniels only. Mr. Daniel, we believe, never shot pheasants but with spaniels; we know that he considered any other dogs used in this sport misplaced; but however this may be, his dogs seemed as though they were purposely made for this sport, so excellent were they. "Spaniels," says this gentleman, "for pheasant or cock shooting, cannot be too strong, too short upon the leg, or have too much courage; the thickness of the coverts will oppose, and sometimes almost overpower, even this combination of form and spirit. Should the woods be very extensive, when spaniels are steady from hares, they cannot well be too numerous; but if given to hunt hares, they disturb the pheasants. Upon no account accept or keep a spaniel (it is needless to tell a sportsman not to *breed* from) which has any taint of the hound in his pedigree, although for generations back; they will be sure to hunt hare in preference to winged game; and the stock may be crossed everlastingly, may attain beauty, strength, symmetry, yet this latent spark of the harrier will never be extinguished." (*Rural Sports*, vol. iii p. 66.) The keeper of Mr. Litenhouse shot pheasants to terriers; and we have known others do the same. This keeper had also one terrier that he had broken to point them steadily; and there can be no doubt that there are some advantages in this course, for the wiry-coated sort will penetrate the thickest cover with alacrity. When we went out alone for pheasant shooting, we usually shot to one very steady pointer, having a bell to his collar, and as the woods belonging to the manor of Tollesbury, which we held, were none of them large, and were likewise crossed with paths, one steady pointer

with a bell was sufficient. On one occasion Mr. Daniel did us the favour of bringing over his spaniels, and truly they made a very good display, and made the welkin ring a merry peal; and it fortunately happened that our sport was excellent, although our woods were not very well stocked with game, having been previous to our taking them much neglected. Mr. Thornhill, an author not so often quoted as we think he deserves to be for his straightforward, impartial, and unassuming remarks, tells us that he also formerly made use of springing spaniels for pheasant shooting, particularly for three or four of the first weeks of the season, after which he found that the moment the pheasants heard the dogs they quitted the whole, or at least that part of the wood simultaneously. We have heard this effect said to be produced by spaniels, noted by others likewise; and, on more than one occasion, have witnessed it ourselves. It is, however, so enlivening a cry rung in our ears, and particularly so when the assembled gunners are sufficiently numerous to take different stations in a large cover, that, with the stirring effect of expectation, the thrilling sound of a whirr, and the joyous exclamation of *mark!* we should pity the phlegm of him who would not give the chance of a bird, more or less, to be thus excited. We can perfectly understand why the ardent sportsman daily seeks for excitement both for body and mind; but we have yet to learn how the destruction of twenty, thirty, or forty individuals of so beautiful a portion of the feathered creation, can constitute the happiness of any one, however extensive are his preserves, and however well stocked they may be with these birds: — *mais chacun à son gout.* To return, however, to the kind of dog which is best fitted for pheasant shooting; it must be allowed, that in this particular sport tastes vary much.

Some use beagles in this sport, and a few, as we have seen, employ terriers; which diversification is sometimes proper, and attended with success. But to meet with much sport by the use of either spaniels or beagles, it must be in a particular locality, such as thick hedgerows, furze plantations, and young woods, where the setter or pointer might stand unseen until his own and his owner's patience were exhausted. We need not hint to the well practised pheasant shooter, that the situations we have just noted are the most likely places to find pheasants after a very wet night, as they appear to be greatly annoyed at the droppings from the leaves of trees over their head where each drop falls almost with the emphasis of a stone. In pheasant shooting tolerably early assembling is necessary for a party of shooters, who would do well first to scour the stubbles of wheat, barley, and bean fields; for the birds that escaped from thence would take to the neighbouring woods; whereas those in the woods, when driven from thence, might not be polite enough to wait in the open field the visit of the sportsman. A foggy day is not unfavourable to pheasant shooting, the birds then stray abroad, and rove to considerable distances. Nevertheless we have always observed, that on those days pheasants are doubly alert with their ears, consequently springing spaniels are not good to quest with. We used on these occasions to go out with one steady pointer, of course unbelled, and when making our way cautiously alongside the hedgerows which skirted the covers, it was amusing to see how our own mincing gait was assumed, not mimicked, by the intelligent brute, who also crept stealthily along; and in this way, by close beating the patches of cover very quietly, we seldom failed in finding sport. On the contrary, when a very bright day shines over the head, and having tried the morning feeding grounds, we would advise the gunner to scour the woods well. If it be done with pointers, and you take two, let both be belled; one should have a light tinkling bell, which should be the dog that stays more closely to you than the other; which difference almost always occurs between two dogs. The wider ranging dog may have a bell of much deeper tone, and thus you will be readily apprised which dog has the point, and you will act accordingly. If you value the strict discipline of your pointers, never enter a wood without a staunch retriever; a bird being killed or wounded, your pointers come to *heel* instantly; your retriever is *hied out*, and finds your bird — he returns and places it in your hand. Every one enacting their parts in the drama in this methodical way, you feel the pleasure which thrills through the breast of every one who has done his *work* in a *workmanlike* manner.

2647. *Avoid killing a hen pheasant*, except on some very particular occasions; the principal one is the increase of the hen birds to such a degree as to out-number the cocks. As this does happen occasionally, then to thin them assists the general stock; but we fear that this excuse is sometimes made when it ought not to be. It was a very excellent conventional understanding, that a fine of half-a-guinea should be paid to the keeper of the manor, whenever a hen bird was killed. It is, however, often evaded; and from the novice is not exacted sometimes, when we think that it ought to be. The size of the cock, the length of his tail, and his occasional call to his mates when all of them are absent, are sufficient guides for the most inexperienced; therefore never *excuse* the fine. What says the poet *Pye*: —

“ But when the *hen*, to thy discerning view,
Her sable pinion spreads, of duskier hue,
The attendant keeper's prudent warning hear,
And spare the offspring of the future year;
Else shall the *fine*, which custom laid of old,
Avenge her slaughter by the forfeit, gold.”

2648. In *pheasant shooting*, whatever dogs are employed, be particularly careful that they are so well broken in, as not to notice other game. If spaniels be used, the thickest cover should not daunt them; and then the more there are, the more sport they will show, provided all are broken from questing any other game than that it is intended they should hunt. If they are not, as Mr. Daniel says, "they disturb the pheasants who just fly up, and perch upon the lower boughs; and the ground of the covert is in vain traversed and beat for birds that are already some yards above it: in short, a spaniel that follows a hare further than whilst in view, is never worth keeping. Other circumstances to be minded are, that when a spaniel is once put into a covert, he is never to quit it to range in the fields, which some slippery ones will do, whilst their owners are beating within it. When a spaniel owns a haunt, and quests freely, there should be no disappointment; whenever the notes are doubled, their master should be certain there is game, and accordingly press forward. Much depends upon the practice which spaniels have: the constant use, and the killing of game to them, is as essential to the steadiness of a high-mettled spaniel, as to a high-bred foxhound; neither can be worked too hard, if kept well in blood." Mr. Daniel justly cautions every breeder of spaniels to be most careful that the breed is strictly pure; above all avoid the most distant cross of hound in him; although the stain may have been generations back, he will hunt hare in preference to winged game. "A stronger instance," says Mr. Daniel, "could not well be exhibited, than in the spaniels of the deceased Lord Waltham and Mr. Hoare: a road only parted the seats of these two gentlemen, and their gamekeepers frequently shot in the woods together; their dogs were equally handsome, but those of the former would drive hares the day through, and consequently sprung every thing that accidentally laid in their course, whilst those of the latter no more ran hares than they did sheep; they would, indeed, find the hares, but follow no farther than they saw them: they were always in their places, twisting around every stub with that agility, and possessed such fineness of nose, that neither woodcock nor pheasant could escape their search. Lord Waltham's spaniel bitches had originally a cross of the beagle, and although this was tried to be remedied by resorting to the best dogs, the tendency to *hare* could never be subdued." (*Rural Sports*, vol. iii. p. 68.) To this we would add one or two more hints on the subject of *cover beating*, which we are the more inclined to do, because it is equally applicable to cock as to pheasant shooting. Try your ground thoroughly with yourselves, your dogs, and your beaters. A nide of pheasants is often collected near together. Woodcocks are not gregarious essentially, but we have, ere now, flushed three from one spring; and both these birds in the middle of the day will often lie close, particularly when they hear that the enemy is abroad. The morning's scent also, when almost evaporated, makes it necessary that yourselves, dogs, and beaters, should hunt the closer. Try every part of the cover; pheasants are capricious, but in the forenoon are often found under the bushes and brambles, which frequently surround the larger trees of the forest. If a slip is to be found, they are very likely to be there; and if such slip be mossy and sludgy, it will probably harbour a woodcock likewise at the right time of year.

2649. *The time of the year* has much influence over the methods employed in pheasant shooting; and the sport altogether materially differs, whether it be in October or in January. When the leaves have fallen, not only are the birds more scarce, but they are more wary also; and if, in the early part of the season, they have been much shot at, they will almost every one leave the wood as soon as they hear the sounds of a shooting party. Whatever the time of year may be, we however would again advise the sportsman to make every portion of his ground good, either by his own tread, or by the close hunting of his friends and their dogs, as well as to beat closer as the day advances, for the morning scent evaporates: particularly we would recommend to the junior sportsman, that, after having well beaten a wood throughout, he makes a *détour* around, which very often affords him a few more shots. In our own opinion December, however, should close the pheasant shooting practice, and if the owner of the wood himself be the delinquent, he deserves to suffer from it; for it is two to one that the remaining pheasants will mate themselves with those of other localities; for though they are, to a certain degree, domestic birds, and if well fed, and not eternally hunted, are tolerably constant to their birth-place, yet continued warfare will force them to irrecoverably quit covers so often disturbed. Pheasants likewise are not easily kept to woods which harbour many woodcocks; for even though the pheasants may be spared, they will not bear the too frequent firing around them. In such case, if the covert be large, fence off a few acres surrounding the keeper's lodge, if there be one at hand; and such a lodge should exist in every extensive wood, and should be also tenanted by an inmate of determined courage, and unimpeachable honesty. If this be done, the skirts of the wood will afford good cock shooting; and, in the open patches, snipes likewise will harbour. A variety in the game is very pleasing to many to practice on, although it is not so sportsmanlike as confining your chasings principally to one object. If you are determined to pull down whatever comes in your way, whether hare, rabbit, pheasant, woodcock, or snipe, then use a double gun, and employ shot of different sizes. Use also a dog that cannot be spoiled; a retriever, for instance, will answer the best; or, in default of that, a good poodle.

SUBSECT. 11. *Battue Shooting.*

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BATTUE SHOOTING.

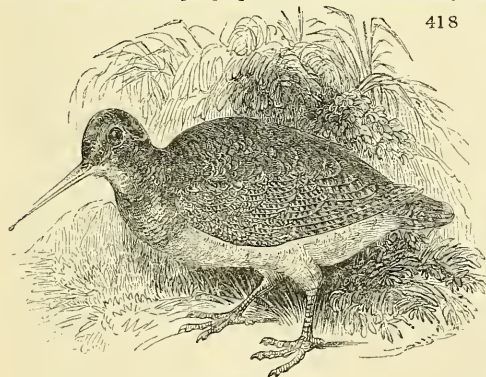
2650. *The battue* is a general gathering of *bush beaters* and *gunners*, usually of the higher orders (*fig. 417.*), when a very large preserve is overrun with game. In such case the owner invites his friends, and perhaps his tenants, to a grand *battue* or attack, sometimes on the pheasants only, when they swarm; and sometimes the *battue* includes every variety of game that is met with, except any one kind be particularly interdicted. We lament when we hear of this indiscriminate slaughter, not only on account of the animals destroyed, but because we think it affords the sensitive and the fastidious an excuse for slandering the sport we are treating of as murderous and wanton. Mr. Daniel notices a day's *battue* on Mr. Colquhoun's manor at Writtham, in Norfolk, when the late Duke of Bedford and six other gentlemen in the year 1796 killed eighty cock pheasants and forty hares, besides partridges, in one day. Mr. Coke also in one day of October, 1797, upon his manor at Warham, and within a mile's circumference, bagged forty brace of partridges in eight hours at ninety-three shots; every bird was killed singly. The day before, on the same spot, he killed twenty-two brace and a half in three hours. In 1801 this gentleman killed, in five days, 726 partridges. In January, 1803, Mr. Coke, Sir John Shelly, and Mr. T. Sheridan, went over to Houghton in Norfolk, on a *chasse* for their friend Lord Cholmondeley, and killed there, with their three guns only (in one day), fourteen brace and a half of hares, sixteen couple of rabbits, twenty-four brace of pheasants, thirteen brace of partridges, and sixteen couple of woodcocks. The *battue* is a word of French extraction, literally bush beating; but the shooting it characterises is, we believe, practised in Germany, Flanders, and some other continental states, as in France. Of the grand *battues* of France, particularly those which were patronised by the Duke of Bourbon, in the neighbourhood of Chantilly, some notice is taken at p. 90. In Germany the princes and nobility exhibit also very extraordinary spectacles of this wholesale slaughter. In proof we may quote M. Dutens, *Itinéraire*, edit. 1793. p. 153.; where, we are told by him, that "Game is in such abundance in Bohemia, that, in the year 1753, the emperor Francis I. made a shooting excursion to one of the estates of Prince Colleredo; in the space of eighteen days the imperial sportsman fired 116,209 shots, and killed 19,545 partridges, 18,243 hares, 9,499 pheasants, with other inferior game, amounting to 47,950. I had this anecdote from the Prince Colleredo himself." With us, also, very great numbers of pheasants have been killed in a day of *battue*; and without doubt, to witness a dozen or two of well armed, well nerved, and well practised sportsmen met together, purposely to thin the numbers of individual or collective game, is a very animating sight. The general *battue* we cannot but consider as the most interesting. In the midst of the bustle my Lord A. pulls down a noble cock pheasant; the Duke of B. contents himself with flooring a partridge, which falls within a few feet of the woodcock prostrated by the hero of many battles. The *battue* of France, Germany, &c. &c. exhibits, however, much more masculine features than those of our country. It is true, that one of these congregational shootings in Devonshire might, in former times, bring the sportsman into collision with a noble stag; but in extra British *battue* it is not uncommon to rouse a wild boar, or to unkennel an old wolf, in which case something more than child's play is enacted; and the fowling-piece of the sportsman is hardly sufficient to enable him to escape scathless.

2651. *The Swedish shall* may be considered as a species of battue, and a very interesting one it is, if we call to the remembrance of our readers its important objects, and its three days and nights' continuance, as described in p. 81. The actors in each of these battues are on the anxious look-out for adventure, certainly in this instance of a more masculine kind; but neither do the Swedish sportsmen neglect the minor game; and as arms are plentiful, so shots are numerous; and the welkin rings with the sounds of this extraordinary gathering. But if the interesting account of Mr. Lloyd be perused, the analogy, though forced, will strike; and, at all events, we shall have introduced so much to interest the reader, that he will resort to the work itself; and if, when he has perused, he do not thank us for the introduction of it to his notice, we shall indeed be surprised. Under this view the battue being considered as an assemblage of persons bent on the pursuit of a certain object or objects, we can trace its existence in many other countries besides those already specified. In India the battue is in daily practice; and while the well trained negroes pursue the wild hog or the jackal with their spears, &c. their master and friends are hunting the tiger at force to-day; to-morrow, probably, himself and friends will be shooting peacocks, snipes, &c. in the morasses. The rajahs call a hunquah, or Indian drive, by orders spread abroad, as the Swedes promulgate their skulls, or congregational gatherings to hunt, from the pulpit.

2652. *The Indian general hunt*, or oriental battue, appears from Mr. Johnson's account to be thus undertaken:—"The day before the hunt or driving commenced, several hundred people were sent to the leeward extremity of the reserved cover, where they fixed on a proper place, and set the nets, which extended about a mile, not in continuation, but at intervals. They required four or five elephants and twenty or thirty bullocks to carry them. Each net was about forty feet long and seven feet high; the cords being of the size of a man's little finger, lightly twisted, with meshes about eight inches square made without any knot whatever, simply by twisting the cords into one another, by which they were rendered more elastic, less visible to the animals, and not so cumbersome and heavy as if made with knots. Sometimes three or four nets were placed in succession, touching or overlapping one another; but more frequently they were intersected by jungle, which was made almost impenetrable by stakes driven down in the midst of it, and thorns twisted between them." (*Indian Field Sports*, p. 14.) It seems that these nets being set, platforms were raised near them which held small sentry boxes made of matting; or otherwise they sink pits, into each of which a sportsman enters armed with a gun, or bow and arrow. However, both to screen them from the sight and the attack of the savage animals to be entrapped, strong thorns are bent over each grave-like opening, which, after the entry of the persons intending to occupy it, are strongly lashed together, but so as to offer loopholes for shooting through. Sometimes a hunquah, when undertaken by a rajah, will occupy several thousand persons. Men, women, and children, all attend, and those who do not carry guns, spears, bows and arrows, take what will make much noise, and drive the beasts into cover, from which few escape, and in consequence for some months afterwards the natives, their children, and cattle, live in tolerable security. Such are the outlines of a battue or death-dealing assemblage of sportsmen, whether congregated for diversion or general safety.

SUBJECT. 12. *The Natural History of the Woodcock.*

2653. *The woodcock* (*Scolopax Rusticola* Linn., fig. 418.), among naturalists, is placed at the head of the snipes *proper*, and is thus accurately described by Bewick:—"It measures



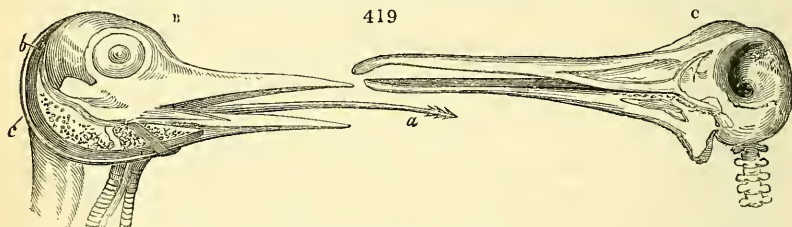
THE WOODCOCK.

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fourteen inches in length, twenty-six in breadth, and weighs about twelve ounces. The shape of the head is remarkable, being rather obtusely triangular than round, with the eyes placed near the top, and the ears very forward, nearly on a line with the corners of the mouth. The upper mandible, which measures about three inches, is furrowed nearly its whole length, and at the tip it projects beyond and hangs over the under one, ending in a kind of knob, which, like those of others of the same genus, is susceptible of the finest feeling, and calculated by that means, aided, perhaps, by an acute smell, to find the small worms in the soft moist grounds,

from whence it extracts them with its sharp pointed tongue. With the bill it also

turns over, and tosses the fallen leaves in search of insects which shelter underneath." (*British Birds*, p. 43.) We have here an opportunity of noticing some of the ingenious contrivances of Nature to meet as well the particular as the general wants of her creatures. It is evident, from what Bewick so truly says of the extreme sensibility of the mouth of the woodcock, that there must be some structural peculiarities present to answer these purposes. We will attempt to illustrate what these are, not by the woodcock direct, but by placing a sketch of the skeleton of his head *A*, in company with a dissected head of the woodpecker *B*; and, as both are insectivorous, and both are effective borers, by means of a lingual apparatus, it may be supposed that the mechanical contrivances made for the capture of insects deeply imbedded in either mud, earth, or decayed wood, would be much the same in both; and as we find Nature usually takes the shortest course to accomplish her ends, so here the actions of these birds in procuring their food being the same, the organs employed do not essentially differ. The tongue of the woodpecker is commonly described as being of an enormous length (*a*, *fig. 419. B*) but which account is not quite correct, as, upon a critical examination, the true lingual portion is short; but to it a long additamentary portion is added, which is little more than a horny extension terminated with barbs, so placed as to readily transfix any insects which the woodpecker might meet with, or any worms, &c. which the exquisite powers of discrimination in the woodcock might make him select. The letter *b* of the same figure points to one of a pair of muscles which arise together from the base of the upper mandible; these separating on the forehead pass around the head, and insert themselves into the lower jaw. *c* are cartilaginous straps to strengthen these muscles. Were we to offer nothing more than the figures, they alone would serve to show the admirable contrivance by which this instrument is made prehensile, and capable of extracting from any hollow which the bill (*fig. 419.*) of the woodpecker, or that of the woodcock, may enter. By the aid of



HEADS OF WOODPECKER AND WOODCOCK.

Blumenbach we shall, however, further illustrate the subject. He says, "Much of the penetrating and prehensile action of this organ depends on a singular hyoid bone, of a very slender aspect, with very long pillars (*crura*), consisting of five glisty portions composed of a single piece and two pairs. In the quiescent state of the organ, the former lies in a fleshy and very extensile sheath of the bill. The first pair of cartilages is articulated with this, and they are placed at the sides of the neck. The second pair, commencing from these, run completely over the skull under the skin, and advancing from behind forwards, their converging extremities are placed together in a kind of groove, and commonly terminate anteriorly by an attachment to the right side of the upper jaw. This posterior pair of cartilages may therefore be compared to steel springs, which actuate the whole organ. This is an elegant example of the great share which mere elasticity possesses in the performance of some functions of the animal economy. When the tongue is to be darted out, the anterior pieces are drawn together, and enter the sheath of the single portion extended for their reception. The tongue is thus lengthened, and admits of being thrust out some inches." (*Comp. Anat.* p. 237.; see also p. 616. in our *Natural History of Birds*.) The more this subject is looked into the more shall we be surprised at the varied means employed by the Great Architect of Nature to enable his creatures to compass the ends necessary to their existence, in all of which consummate skill are manifest, although they are united with great simplicity in most cases. Colonel Montague also further illustrates this subject, equally interesting to the intelligent sportsman and the naturalist:—"The woodcock," he says, "is naturally a shy and retired bird, rarely taking wing by day, unless disturbed; but just at the close of day all, as if by common consent, quit the wood, nearly at the same instant, and wander over the meadows in search of splashy places and moist ditches for food, retiring to their hiding-places again just at the morning dawn. Thus, when most other land birds are recruiting exhausted nature by sleep, these are rambling through the dark, directed by an exquisite sense of smelling to those places most likely to produce their natural sustenance; and by a still more exquisite sense of feeling in their long bill collecting it. The eye is not called into use, and, like the mole, they may be said to feed beneath the surface; and by the sensibility of the instrument

which is thrust into the soft earth, not a worm can escape that is within reach. The eyes of the woodcock are large in proportion to their general bulk of body, and, like those of some other nocturnal birds, are particularly framed for collecting the faint rays of light in the darkened vales and sequestered woodlands during their nocturnal excursions; thus also they are enabled to avoid trees and other obstacles which continually occur. The nerves in the bill of this bird, as in that of the duck tribe, are numerous, and highly sensible of discrimination by the touch. A woodcock in our menagerie very soon discovered and drew forth every worm in the ground, which was dug up to enable him to bore; and worms put into a large garden-pot covered with earth, five or six inches deep, are always cleared by the next morning without one being left. The enormous quantity of worms that these birds eat is scarcely credible; indeed, it would be the constant labour of one person to procure such food for two or three woodcocks. The difficulty of collecting a sufficiency of such precarious aliment determined us to try if bread and milk would not be a good substitute; and we found that, by putting clean washed worms into the moss, the bird soon acquired a taste for this new food, and will now eat a basin of bread and milk in twenty-four hours, besides the worms it can procure." (*Ornithological Dictionary*, p. 561.) The digestion of this bird must be rapid in the extreme, from what is here stated; and we can strengthen our assertion by an anatomical examination made on one soon after death, where the *caca*, which was empty, was two-eighths of an inch in length. The gizzard, however, contained no animal matter, which was, without doubt, digested immediately; while a few vegetable fibres of a moss-like appearance, some small black flat seeds, a pebble, and a little sand, was all that was left within this glutton's alimentary tract.

2654. *The sex of the woodcock* has been considered as entirely unmarked by any external signs; internally the anatomist would readily detect it. It would however appear, according to Mr. Pennant, not so difficult to determine on as is supposed. On the contrary, he tells us it may be readily done by examining the outermost feather of the wing, which in the *hen* presents a narrow stripe of white along the lower part of the exterior veil of the feather. In the *cock bird* it is otherwise; the same feather at the same part is beautifully and regularly spotted with black and reddish-white. According to our own experience, there is this distinction perceivable; but it is proper to state that, in some cases, it is not so clearly marked as to make a heavy bet upon it safe. Another criterion with many is the size, which in the *hen* is said always to be the largest; but as far as our observations have been carried, were there no other marks, the size would be a very fallible one, it being so usual for these birds to vary little from each other in size. We hardly need to note, that the little pointed feather at the extremity of what is known as the bastard wing in each sex was formerly much sought after by artists, particularly miniature painters. The great improvements, however, made in the arts, have taught the brush-makers to equal these diminutive brushes, almost, as well as those of the bird himself. Woodcocks are known to arrive on our south coast during the month of October, more or less sparingly, according as the rigours of the country they leave, and the lessening of the supplies of food there force them away. They are probably also much influenced by a wind, which, blowing from their continental location, wafts them here without much exertion to themselves, which they are not able to bear, as we know by the numbers of dead picked up after a storm, or found to alight for shelter on the sails, spars, and rigging of vessels making for our shores. Their form of body and placing of wings, although large, are not so mechanically framed as those of some other birds for long voyaging; consequently, under these disadvantages, without the aid of a favourable gale, they are not likely to traverse an extensive passage. In November and December the larger bodies appear in *flights*, according as the wind serves their purpose. On their first arrival they usually show signs of excessive fatigue: it even appears indifferent to them where they alight, and thus they have not unfrequently been picked up in the open streets of the towns on the sea-coasts, being too tired to rise from the spot they dropped on. When this is the case, they are on examination usually found to be extremely lean, which presents to our mind a question not of easy solution. Is their absorbent system so active as to reduce their flesh in two, or at the most in three, days? As it is well known no such exhaustion is ever observed either in the redwing or fieldfare that arrive about the same time, we must look to constitutional peculiarity for a solution of this difficulty, which consists in the rapidity of their digestion, and the absence of all means of repairing their waste during their voyage. One, or at most two days after their arrival, the greater number depart, most of them to their former localities. It however occasionally happens, that at first they will visit mossy moors and light marsh lands for boring, until frosts set in, which hardening the earth, and thereby stopping their supplies of nutriment, they usually make their way to their old woods, where warm sheltered springs keep open the ground, and nourish the insects they feed on.

2655. *Three varieties of British woodcocks* are noticed by Dr. Latham: — "In the first the head is of a pale red, body white, and the wings brown; the second is of a dun, or rather cream colour; and the third of a pure white. Dr. Heysham, in his *Catalogue of Cumber-*

land Animals, mentions having met with one, the general colour of which was a fine pale ash with frequent bars of a very delicate rufous; tail brown, tipped with white; and the bill and legs flesh colour. In addition to these, some other varieties are taken notice of by the late Marmaduke Tunstall, Esq. of Wycliffe, in his interleaved books of ornithology." Mr. Daniel also seems to be aware of such a difference, for he observes, "That there are different sizes of woodcocks, it is presumed, will be assented to by all sportsmen; those found in the first of the season are of the largest size, fly heavily, and their heads appear to be muffled, especially the under parts, with short feathers: the most numerous tribe, which arrive in November and December, are rather smaller, their heads less, the feathers smoother, and the bills shorter. Woodcocks that come about Candlemas are also small, and differ in their manner of flying; are quicker of wing, take long flights, and are well known to be more difficult to be shot, from their not rising above the spray, like the larger muffled woodcock, but make their way for some distance, as it were, among the boughs." (P. 161.) M. Baillon also notices two kinds of woodcocks:—"The largest," he says, "arrive first, and may be distinguished from the others by the colour of their legs, which are of a greyish tint inclining to rose colour. The smaller kind have a coating similar to that of the common woodcock, but their legs are blue. Variegated plumage and other anomalies now and then occur among these birds; thus a pure white one has been seen, and we can only wonder that still greater variations do not more frequently take place; for although most sporting works, in their account of the woodcock, usually confine his foreign residence to the north of Europe, yet it should be known that he is likewise found in all the climates, both hot and cold, in the old continent, as well as in North and South America. It is however a curious fact, that he is every where an emigrating bird. His migrations in some countries appear, however, to be confined to a journey from the plains to the mountains, and *vice versa*. In Europe he is located during the summer in the Alps, Pyrenees, and other lofty mountains, from whence he migrates to the regions below, and probably some reach us. His universality thus established, we need not be surprised that he should thus *sport* into varieties, seeing that every locality, according to its proximity or remoteness from what may be considered as its attracting spot for domestication for the time, has its influence over the size, colour, and even the aptitudes, of the animal."

2656. *It is a mortifying fact*, that the woodcock is by no means met with in such plenty as formerly: consequently it may be asked, what is the reason of this? It cannot be believed that the attachment of the inhabitants of Norway, Sweden, Denmark, and other northern localities, to the eggs of this bird, can have occasioned such a falling off in its numbers: it is impossible. Do we not know that millions of the eggs of poultry arrive here every year from France; yet, when we visited the French provinces, we saw a glut of poultry wherever we went: nor can a few hundred dozen of woodcocks' eggs be perceptibly missed among the myriads that are to be met with over the wide spread and densely wooded harbours it occupies in the north of Europe. Formerly these birds were stalked and springed; they are so still in some degree; but the worst is, that they are unmercifully pursued, not as formerly by one gunner from every village, two or three from every town, and twenty or thirty from every city; of which number it is only fair to conclude that not more than one out of five was a ready shot. But how stands the case now? Gunners exist every where; and where fifty years ago one gun was employed, at least twenty are now in full use; and where of these numbers one out of four or five only could hit a flying shot, even by chance, we see schoolboys now take snap shots, and pull down their bird with almost unerring certainty. Is all this, we ask, not literally true? and can we therefore wonder if these birds become scarce? Further, we have also to remark on the decrease of cover in Britain as an operating cause of the alleged scarcity. Where are now our vast forests? They have yielded to the axe, and corn now grows where woodcocks used to harbour. Will they remain altogether unsheltered? they may stay, but the spots they sought for are covered with grain, the slopes they fed from are drained, and to them desolation spreads over the land, and therefore many of them return to their former home, bleak and cold as it is, never more to return here. Of the difference between the numbers of woodcocks now to be met with, and what were to be seen thirty years ago, Mr. Lascelles, whom we have already mentioned, observes, "It was no uncommon thing, thirty years ago, at a place called New Bridge in Glamorganshire, to see five or six cocks on wing at the same moment, and to kill ten or fifteen couples was not thought an extraordinary day's work. I met with an old farmer some time since, in that neighbourhood, who recollected the circumstance of a man once killing five and twenty couples within the space of a few hundred yards; but this happened upwards of half a century ago, and at that season of the year when a number had collected together for the purpose of revisiting their native land. At present, and indeed in every successive year, the scarcity becomes more apparent; so that in those districts where there used to be a superabundance, the coverts are, in a great measure, deserted." (*Ibid.* p. 221.) Mr. Daniel tells us, that Mr. Yeo, of Swansea, killed one hundred couple of woodcocks in one season. In Ireland the Earl of Clermont shot half as many in a day; at which time it is to be observed, at

Ballyshannon, in the county of Donegal, we are told they were sold for one penny each, and the price of the powder and shot.

2657. *That woodcocks breed in this country* is now too well known to be disputed. Some, it is true, being detained by having received wounds, mate themselves here by force; but it is pleasing, by the frequency with which their nests have of late years occurred, to be assured that the builders, most of them, have remained from choice. We cannot say much for the care bestowed in the construction of their nests, when compared with the nidification of most of our British birds. A few fern stalks intermixed with leaves, and perhaps, but not certainly, a little moss, form the couching place of the hen bird, who deposits four or five eggs of the size of those of the pigeon, of a dirty greyish tint slightly enlivened by dusky markings. The few remaining sceptics on the subject of woodcocks breeding in this country will find ample proof thereof in all ornithological works. Mr. Daniel's notices on this head are too copious, also, not to satisfy any inquirer that such is the case. It has been long known that they visited Scotland, but it was usually late: now they are not only found in tolerable abundance in the Highlands, and a few in Caithness, and the Orkneys likewise, but they also breed there. On May 28. 1829, a woodcock's nest was found with eight fully fledged young woodcocks in it, on the shore of Loch Lomond, near Belloch Castle. (*Oxford Herald*, June 13. 1829.) As woodcocks seldom lay more than four or five eggs, the number here stated was extraordinary; but the respectability of the source of the information should prevent our doubting its accuracy. George Fairholme, Esq. in the *Magazine of Natural History*, vol. i. New Series, p. 336. offers also many interesting notices of the breeding of both woodcocks and fieldfares in Scotland, to which we would refer the inquisitive reader; and we do it with the more earnestness, as he details habits in this bird that have not hitherto been noticed, but entirely passed over, or at best hinted at by others. A correspondent in the *Sporting Magazine* for October, 1839, also informs us, that he was told by the keeper at Lawns, Perthshire, that he had more woodcocks at that moment in the covers under his charge, than he had had at any period during the previous winter. The keeper at Srowan, also in the same neighbourhood, has found a great many woodcocks' nests this summer, all thriving birds, and to all appearance as happy as if in their native country. Some of the broods took flight about the latter end of July, and he (the keeper) calculates upon having a fair show of cocks this season, independent of a good flight from a foreign country.

SUBJECT. 13. *Woodcock Shooting.*

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WOODCOCK SHOOTING.

2658. *This sport has many ardent admirers* (fig. 420.). We have heard of one who, although he had a well stocked manorial territory at home, yet every year crossed over into Ireland purposely to enjoy this "fox hunting of shooting," as Colonel Hawker calls it, who may himself be supposed to be somewhat touched with the same mania, from his adding, "that a real good sportsman feels more gratified by flushing and killing a woodcock, or even a few snipes, than bags full of game that have been reared on his own or neighbour's estate. Localities of cock shooting are widely distributed over the British dominions. Ireland throughout is unquestionably the very best spot for a zealot in cock and snipe shooting; the nature of the ground, inclined as it is to bog and marsh, suits the one and the other of these birds. Colonel Howard, of the North Gloucester Militia, in company with another officer of that regiment in some preserved woods at Slane, to our

own knowledge had, in little more than two hours, twenty-two shots; the returns we entirely forget, but we know they were not so numerous as to establish the sporting fame of the shooters. In some of the wild parts of Ireland, were the English sportsman to inquire of a native whether there were any woodcocks in the neighbourhood, the reply would very probably be, — "Fait, yer honour, we have none at all at all; we have only a few crowour keougs." We entirely agree with Mr. Thornhill, that "If a sportsman is fond of cock shooting, it will repay him well for his trouble to take a trip to Ireland; it is not material what part to recommend, as it is impossible almost to go to a bad place for sport. As to asking leave, it is needless; as the only cause of jealousy that can subsist between the visitor and the owner of the ground will be for not acquainting him of his coming, in order that he might have it in his power to receive him in the usual hospitable manner, by providing beaters to show him sport, giving him the best of fare, a good bottle of claret, and a sincere and hearty welcome, assuring his guest the longer he stays and honours him with his company, the more welcome he is, and the happier he will make him." (*Shooting Directory*, p. 125.) We can vouch for the truth of this; for a more generous, warm hearted race is not to be found than among the Irish sporting gentry; and we assert this from the full experience we had of them in their own country. Wales, both North and South, presents also very good cock shooting; and many sportsmen visit one or the other to enjoy the sport to be there met with. Devonshire, Cornwall, Dorsetshire, and Sussex, are likewise favourite localities for these birds, wherever there is cover to harbour them, and food adapted to their wants. As to the precise spots most likely to hold them in any district, it is not very easy to point them out; for the birds themselves are in some cases, to appearance at least, rather capricious. Mr. Daniel says, "At their first arrival they drop in hedgerows, clumps of trees, upon heaths, among bushes or furze;" and he might have added, in woody gleus watered by rills oozing from mossy ground; where they can plunge their bills in, and thereby extract minute worms and aquatic insects.

Mr. Daniel further observes, that, "when the cocks first take to the coverts, which they sometimes do in *flights*, or numbers, they choose the year old slops, or they betake themselves to the edges of the woods, according to circumstances; afterwards they lie up, in ordinary as it were, in coverts of from seven to ten years' growth." It is a fact, though as we believe not admitted by many, that a very severe frost will occasion their departure from us; at least a very great diminution of their numbers occurs. In such cases, where do they locate themselves? for it would be their certain destruction to return to their original home. Many of them, we have reason to believe, merely cross over to Ireland, where the cold is seldom so intense as to freeze up the boring grounds entirely. We are inclined to this opinion from the unusual abundance of both woodcocks and snipes we met with there, when a very intense frost prevailed in England. It is not the snow, so much as the frost, that drives them away; for when the snow remains in its original state as it fell, they are known to scratch it away from their boring grounds sufficiently to allow them to penetrate the soil beneath, which has been protected by the resisting properties of the snow to external cold. But of course when the frost is so severe as to congregate the snow, and entirely close up the ground, they must leave or starve; and which fate, we believe, overtakes many during very hard frosts. Such being the case, the sportsman must not expect great success in cock shooting in a very severe frost. It is distressing at such a time to witness the shifts that both cocks and snipes are put to, and how tame they become from a scarcity of food, particularly the woodcock, and how they will hang to one spot. It is remarkable, but as true as remarkable, that a good boring spot, however small the cover around may be, will always own a woodcock, and often one only. It is also equally a fact, that when we have killed this land, or rather bog, owner, we were sure within two days to find another which had located himself there. This solitary inclination is fortunate for them, for they eat voraciously and frequently; and one moderate springy plash will hardly support more than one bird at a time. Nevertheless, although they are tolerably constant to their location, it is evident they have a little of the itch of travel, and, like other birds, wish to see the world. It would appear likewise possible, that they had in some instances actually swallowed up all the food around a moderate sized boring locality before they took their departure.

2659. *Some describe the woodcock as essentially a solitary bird*, nor can we deny but that he appears to like more room than company; yet numbers are often found together. Removal is frequently forced on one who had hitherto been so long domesticated to one spot as to be actually known to an observant passenger. Among the habits of the woodcock essential to the sportsman to know, one is, that although he may be flushed, he seldom voluntarily flies in the daytime, but more frequently remains hidden in the recesses of the thickest parts of the wood, looking out however, as well as his purblind eyes will let him, and scenting his food as well as his exquisite olfactory organs will assist him in doing. If the sportsman now drop unexpectedly on him and flushes him, should a straightforward opening present itself, let the shooter take his time, for he will skim away horizontally, and it will be his own fault if the bird be not brought to bag. But the

difficulty to all but the very inexperienced shooter is, when a cock, for want of an horizontal passage by reason of crossing branches and thick foliage, is forced to rise perpendicularly, which he does with much bustle and flapping of wings. How, we ask, is he to be got at in the midst of so much confusion? Every professed cock shooter is fully aware, that all other obstacles created by the efforts of this bird to escape the fatal tube are nothing to the difficulty of taking an aim when he is thus darting through the tanglings of the covert; and yet there are many who will bet that they will hit nine out of every ten of such shots that shall present themselves. The Toomers (two brothers of much sporting celebrity) would, we make no doubt, have laid heavy bets on their own chance in such a case. Colonel Hawker, whose pithy method of giving his shooting instructions is singular, would do better were he less concise. One so much a master of the subject should surely not wrap up all his experience on cock shooting merely in what follows: — “In a country where cocks are scarce, be sure to put a marker in a tree before you attempt to flush one a second time; and when you have yourself marked down a cock, remember how very apt he is to *run*, instead of *rising*, from the spot in which you may have seen him drop. If a cock flies away, and continues to rise wild, go fairly but quietly beyond where he may have last dropped, and then turn back again to beat for him (leaving some one to make a noise on the side where you had before advanced on him), and he will then most likely either lie close, or fly towards you. If this will not do, take your station quietly to windward (as cocks generally fly against wind), give a whistle when you are ready, and let the other person then draw on, and flush him. His cry of ‘Mark!’ will assist in frightening and driving the cock forward, and be a signal for your preparation.” (P. 166.) Both the woodcock and snipe are sad bugbears to very moderate shots, their twistings so discompose them from taking aim. An amusing instance occurs in the following anecdote, which we pledge ourselves (extraordinary as it is) for the truth of: — “We used, when quartered at Lewes, during a frost to pursue wildfowl on the marshes, and woodcocks and snipes in the woods around Glynde; and there, on one occasion, we met with an unfledged sportsman, who naïvely remarked, that he came out principally to redeem his pledge to his wife that he would bring her home a woodcock. * He had, he said, already followed one for nearly a week, and although he had every day got a shot, and one day two shots at him, he was always foiled. He however consoled himself, that he should that day go home with a better grace, for although he could not fulfil the whole, he could the half of his promise, for he had shot a snipe!”

2660. *Woodcocks are certainly much influenced by changes in the weather* to make shifts in their localisation. A friend requests you to go with him on the morrow to — Wood, where, two days ago, himself and another had some very good cock shooting. You go, and perhaps hardly flush one. How is this? Has there been a bleak north western blowing the tall oaks, and almost bending them to their centre? There has, and the reason is evident. Pass on to the other side of the hill, where a large copse with thick underwood shelters all who rest in it, and the old acquaintances of the other day are then found, laid up, not high and dry, but in deep and somewhat moist and plashy spots. Woodcocks do not relish storms; they are the very sons of quiet, and they shift themselves from one wood to another according to its lee or its windward bearing. We have already noticed Wales, both North and South, as affording good cocking. In both these countries some large covers are to be met with which usually offer good sport, but here particularly, and as we think more than in most other localities, these birds are uncertain, and the sportsman must take his chance and not slander the covers, if his want of tact should have led him to a spot which particular circumstances have made scarce of game, and which, by certain changes of wind, weather, &c. &c. may again fill to-morrow. In very large woods cocks are apt to shift from one side to the other, either to avoid the storms by locating themselves on the lee side, or otherwise to choose new boring ground; for as we have already shown, twenty or thirty cocks alone would make some inroads upon the edibles they meet with when located a few days only, if the boring spots are few, or much confined, such gormandisers are they. Essentially these birds are considered as rovers, but when it suits them they are as constant to their homes as the old fox to his earth; this is proved by our account of the would-be cock shooter who so ineffectually pursued the same poor bird we have noticed at Glynde near Lewes. We would recommend the uninitiated individual in cock shooting, who cannot cover his bird by reason of his windings and twistings, not to fire at him, which forbearance will be repaid him in all probability by his dropping again within a few yards, and if then missed may be again flushed, and present another equally fair chance. Strange it is to say, but it is no less true than strange, that some very fair shots (we believe we have already hinted as much) at other birds, are so flurried at the flushing of a woodcock, as to be entirely prevented from taking any effective aim, often from even firing off their gun. To such we would advise a month or six weeks' sojourn in Ireland, where the alder hedgerow plantations are so common. In these woodcocks like to lie, and from which they are to be flushed either by close hunting cockers, or, what is often better, by Irish beaters with long supple wands, who, one on each

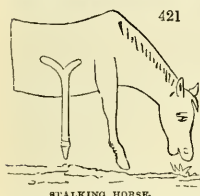
side, march in a line with the sportsman. Now Paddy, who is usually up to every thing where a bit of sporting is to be engaged in, with his long thrasher is sure to move the closest lying cock, and when a bird is here flushed he usually takes straight ahead, and pitches some thirty or forty yards in advance; so if he be missed he is almost certain of presenting himself again, and it will be hard if our tyro cannot pull him down at last. Should he only once succeed in taking a deliberate though quick aim, and ground his bird handsomely, particularly if he do the same two or three times in one day, he will in all probability ever after be a proficient in woodcock shooting: so contradictory, yet so true it is, that the shooting of woodcocks is one of the easiest, and also one of the most difficult of attainments among gunning field practices.

2661. *Cocking spaniels* are unquestionably the best dogs for cock shooting, and with them the sport is most animating. A very steady brace of setters or pointers, one having a deep toned the other a lighter toned bell, hung around the neck (as already noticed in *Pheasant Shooting*, p. 861.), suit also the taste of some sportsmen either alone or with one friend, and where the cover is extensive and not full of thorns and briars it is very pleasant shooting; but we again repeat, that cocking spaniels for a party, or for large, thick, and strong covers, are to be preferred. They however should be extremely well broken, and should hunt either very close or spread more widely, according to the number of guns out; and which, if they be very well trained, they will do of their own accord, as we have often witnessed when shooting with Mr. Daniel both in our own and his woods. His dogs when hunting presented a perfect sporting picture; with a single waive of his hand he would spread out his dogs to hunt at large, each dog looking up frequently to watch his directing motions, and listening to his cheers or his rates; indeed, they seemed to live only to obey him. Although it is now many years since we shot with the reverend gentleman (Peace to his manes! for he was a sporting trump), yet we can clearly call to our recollection innumerable proofs of his abilities as a sportsman and his urbanity as a gentleman. We have elsewhere noticed some of his extraordinary exploits as a fisherman, indeed we might almost say he was himself a fish, for no water was too deep for his willing spirit to plumb it with his person if a pond or lake was to be netted. We used to admire Mr. Daniel much for the spirit of a true sportsman he displayed in being in general cases unwilling to disturb more than one kind of game at a time. If a pheasant got up when he was engaged in cock shooting, he would not willingly fire at it, and if killed by any one of his party he would express his regrets; putting his disapprobation on the supposition that it unsteadied his dogs.

2662. *Both beaters and markers* are required when an extensive and well timbered wood is to be shot over, particularly if the cocks are expected to be in plenty, and the shooters proportionate. The beaters on these occasions should be well instructed in what is required of them, and in fact should be as well broken to the sport as the dogs. Although the master should direct where they should station themselves, they should know how to preserve the same relative situations. Their beating sticks ought to be of some tough supple wood. We have known the carter's whip, or a long thonged horse-whip, made use of; but they are not only expensive articles and liable to injury, but they really are less effective than a tough supple wand. Markers also are equally useful here, as they are in pheasant shooting; and if two or three of the number be placed in different situations, as near the summit of any of the most commanding trees, they can then effectively mark the pitch of almost each disturbed cock. Of course the sportsmen should each be well apprised of the situation and placing of every one of these agents, so that no accident may happen. We have heard of a gentleman of fortune who never shot without markers. As his woods were extensive, his trees lofty, and himself fond of the sport, and very frequently engaged in it, that he might have nothing to reproach himself with, each marker was provided with a coat, breeches, and leggings, of very stout leather, impervious to moderate sized shot: a leathern cap likewise guarded the head and neck. The *beaters*, each with his thrashing wand, proceeding on the line of the shooters at regular distances, strike the brushwood, which, disturbing the couching bird, flushes him. If he falls by a shot, it is well; if not, he is marked down by those aloft; any one of whom having seen his pitch, cries out Mark! or Marked! and proceeds to instruct those below as to the spot on which he grounded. This is noted by the company, who advance in regular order until another is flushed; for if the marked bird be not in the direction of the party, a piece of paper is sometimes attached to a bough, and he rests until a détour is made to seek him and others so marked down. Such is the method we have seen observed by woodcock shooting parties, when engaged in numbers on an expedition of the kind. We have also remarked, on such occasions, that the voluntary pitch of a disturbed cock has seldom been on what might be considered a feeding ground; on the contrary, as though done purposely to avoid raising suspicion, the cock has grounded on a dry but thickly wooded spot, frequently at the root of a holly, or at the base of briar stems. The junior sportsman will do well to bear in mind, that a week or two previous to their departure in the spring, they are often found in pairs, which will afford him a double advantage. If, however, he be very sensitive, the little piping love-note which each makes to the other as they fly along, will probably arrest his hand. We should honour him for

his sensibility, but let him not whisper the disgraceful fact to any veteran if he would avoid ridicule. We need hardly hint to the afternoon or evening shooter in the woods, that at those times the birds are on the feed, or *roading*, as it is called in sporting technicality; and consequently, if there are any about, they are now to be met with in the mosses, edges of springs, and bogs.

2663. *Poaching* (bad luck to it!) is still practised against these admired birds. One of the oldest methods was by means of what was then called the *stalking horse*, which Gervase Markham tells us was in early times a living horse broken-in for the purpose of stalking; for, as he observes, "When a man intends to compasse a shoote among fowle, he must haue some mouing shadow or shelter to walke by him; in this case there is nothing better than the stalking horse, which is an old iade trayned up for that vse, which being stript naked, and haueing nothing but a string about the neather-chappe of two or three yards longe, will gently, and as you haue ocaetion to vrge him, walke vp and downe in the water which way you will haue him, flodding and eating vpon the grasse or other stuffe that grows therein; and then being hardy and stoute, without taking any affright at the report of the peece behind his fore shoulder, bending your body downe low by his side, and keeping his body still full betwene you and the fowle. Then haueing (as was before shewed) chosen your marke, you shall take your leuell from before the forepart of the horse, shooting as it were betwene the horse's neck and the water, which is more safe and surer then taking the leuell vnder the horse's belly, and much lesser to be perceaied; the shoulder of the horse couering the body of the man, and the horse's legges shadding the legges of the man also: and as thus you stalke vpon the greate blanke waters, so you may stalke also along the bankes of brookes or great riuers, by little and little winning the fowle to as neare a station as can be desired; and thus you may doe also vpon the firme ground, whether it be on moor, heath, or other rotten earth, or else vpon the tylthe where greene corne groweth; or generally in any other haunt where fowle are accustomably vsed to feede or abide." (*The Art of Fowling*, p. 47.) As our worthy author, however, was aware that the living horse would entail expense on the fowling poacher greater than his means, we are led to understand that there was substituted an artificial one, seen in *fig. 421*.; and such an effigy was long in



STALKING HORSE.

use among sportsmen of former days, who, thus concealed, could stealthily stalk on wildfowl in the water, and landfowl crouched on shore. We have already noticed the water spaniel as represented by Markham for field sporting, and we here find him again represented as an adjutant in this stalking process as follows:—"And as you make vse of this stalking horse, so must you not in any wise want your water dogge, for he is as vsefull at this time as at any other, nor can you well doe any thing without him, especially if it be vpon riuers, or broad deepe waters; yet you should haue him at such obedience, that whilst you are a stalking you may leaue him with your bagges, saddle, and bridle, and other needments, wher he may lye close, and neuer stirre till you haue shot, and then, vpon the least gybbet or call, to come running vnto you, and to fetch forth what you shall kill; which, with a small practice, he will doe readily and willingly after you haue made him vnderstand your minde, for they are creatures of wonderfull great capacity, and naturally inclyned to the sporte, so that being kept in true awe, there is nothing which they will not with great readinesse performe." To make the artificial stalking horse, Markham directs that the sportsmen "should take any peece of oulde canuasse, and haueing made it in the shape or proportion of a horse with the head bending downward, as if he grased, and stoping it with dry strawe, mosse, flocks, or any other light matter, let it be painted as neere the colour of a horse as you can deuise, of which the browne is the best; and in the midst let it be fixt to a staffe with a picke of iron in it to strike downe in the ground at your pleasvre, and stand fast whilst you chuse your marke, as also to turne and winde any way you please, either for your advantage of the winde, or for the better taking of your leuell; and it must be made so portable, that you may beare it easily with one hand, mouing and wagging it in such wise that it may seeme to moue and grase as it goeth; neither must this in any wise exceed the ordinary stature or proportion of a common horse, for to be too low or little will not couer the man, and to be too big and huge will be both monstrous and troublesome, and giue affright to the fowle; therefore, the meane in this is the best measure, and only worthe the obseruation." (P. 50.) We are told by him that the effigy of other animals also, as the ox, stag, &c. &c. was used for stalking. He however directs, that whatever animal the effigy is to represent, it be made "true in form and correct in proportions, as well as coloured to the life." This figure was to be employed at early morn or dewy eve, as occasion suited or chance presented. Springs, purse nets, and nooses, however, are now more employed: it would nevertheless appear, that the stalking process is not wholly abandoned, as we ourselves when last in Wales saw a sort of stalking effigy then in use there, but which was nothing more than a tall and almost shapeless mass of canvass strained and darkly painted, which being braced on the arm and carried before the

shooter by an assistant, so covered both, that through a small opening the gunner could take his aim at fowl on shore, or in fact at any bird he might discover. This plan however, as may be supposed, was more effectively employed against wildfowl in the marshes, than against woodcocks, which, we were told, were even then mostly taken by glade nets hung across their evening flights, and nooses laid in the paths to their feeding grounds.

2664. *Mayer, in his Sportsman's Directory* (query, *Poaching Directory*?) enters at large into these particulars both by figures and printed directions, and to him we leave the task of giving these unhallowed instructions; hoping, however, that every one who tries them may be disappointed. The respectable writer of the matter of Scott's *British Field Sports* tells us, that "The neighbourhood of Torrington, in Devonshire, is famous for woodcocks and snipes, being found there in such abundance, that one person, a few years since, has been known to supply the metropolis with them to the value of nearly two thousand pounds in one season. Great part, it may be supposed, are taken by nets and springes, as in Cumberland and Westmoreland, where these birds were formerly so cheap as sixteen to twenty pence a couple. Bridge springes are set in the rides, where the markings and mewtings are discovered; also glade or flight nets are hoisted up by pulleys upon trees. The Kendal and Exeter coaches have a chief concern in the London supply, the latter sometimes carrying up thirty dozen of woodcocks per week; price, at particular seasons, as high as 16s. the couple." (P. 240.) The dog used by the Welsh poachers at the present day is like almost all poaching dogs, a mongrel of many bloods, but is always clever and well educated to poaching practices. It is true he does not talk, like the German dog or the London canary; but he can do better—he can act effectively. Mr. Dobson in his *Kunopædia*, p. 115. says, "The poacher's dog in Wales is an ugly raw-boned, cross-made derivation from the light setter, degraded through half a dozen generations of bastardy; than which, with a view of being made up into pointers, it is not possible to conceive more unpromising materials; and upon which therefore, if such be the effects produceable, it is fair to conclude what a similar discipline is capable of doing with superior natures. By hunger and hard work, of both of which they get plenty, they are brought down into obedience; and their draw upon a cock in a wood, under the dread of their master's arm, with the power of which they soon become acquainted, is wrought into a full stop.

Now from the dog let us observe the conduct of the master. As soon as the former is clearly fixed, instead of pressing on him, or searing all the cocks in a wood by his noisy admonitions, the latter retires in silence instantly: he is little solicitous about the conduct of his companion, who by this time has learned at what a terrible price his sides must pay for it, if with the full consciousness of the bird being before him he should press forward to a spring. Having got off as great a distance as the wood will conveniently admit—perhaps twenty or thirty yards—the master now unslings the stalking horse, which had been carried at his back; and mounting it on his left arm, presented towards the bird, he begins a circuit, which, with as great a regularity and as quick a pace as the nature of the ground will possibly admit, he completes around the spot, continuing his rate, but contracting the circle. The vulgar idea is, that there is magic in this circle; which, when completed, deprives the bird of the power to rise. Now the truth is, the cock having taken alarm on finding himself beset, has his eyes all around; and perceiving, as it flits along, this formidable vision of the stalking horse presenting itself at every avenue (for a cock always looks to an avenue for his escape), and threatening him in every direction, he lies fixed under the magical impression of fear; or rather perhaps, although alarmed by the appearance, yet not apprehending any direct hostility to himself whilst it continues to move onward, he skulks close, as the instinctive means of escaping notice; until, approaching him in narrower circles, the lynx eyed director of it deseries him on the ground, and levelling a short gun through a hole in the shield lays him dead before the dog's nose." The under-wood generally in Wales is neither so strong nor so united as in England, few tanglings of brushwood, which would draw the fleece off a sheep's back, are there to be met with. It is also a mistake to suppose, that these privacies of interweaved foliage are the constant resort of the cock. When shot at day after day, or hunted every hour or two, he may secrete himself there; but such are not the spots he affects by choice in Wales particularly, for they present no true boring ground, neither do they offer any but an unsafe shelter; for the attentive sportsman well knows that, foolish as this bird appears in some respects, he is crafty enough always to have an opening before him, from which he can instantly rise. He sometimes makes a rustle, but very seldom gives any proof that he is entangled at his outset. In Ireland both the woodcock and snipe are considered as game, and hence are under the protection of the law; and we cannot but hope that a legal protection will be thrown over them ere long in England also. The common principles of humanity should influence us in preventing a war of utter extermination of a race that comes to seek food and protection from us. We love fair shooting as well as our neighbours, but we cannot think well of the sportsman who, having had a fair day's sport, will yet follow up the last couple.

SUBJECT. 14. *Time of the Arrival and Departure of migrating Birds.*

2665. Mr. Markwick's observations made in Sussex upon the migration of birds, taken on an average of twenty-six years, were as follows :—

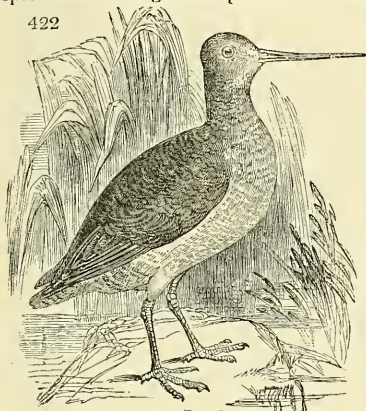
	First seen.	Last seen.		First seen.	Last seen.
Woodcock	October 20.	April 1.	Redwing	November 20.	March 18.
Snipe	November 20.	March 20.	Royston crow	December 22.	March 26.
Jack-snipe	December 26.	March 16.	Swallow	April 18.	October 31.
Landrail	September 1.	October 20.	Swift	May 9.	September 3.
Quail	August 20.		Cuckoo	May 1.	July 10.
Fieldfare	November 21.	April 10.	Wheatear	May 4.	September 26.

2666. This table, Mr. Daniel tells us, was formed from the observations of Mr. Markwick on the subject, which he had continued for a period of twenty-six years, and is therefore interesting, as well to the naturalist as to the sportsman. Circumstances, as may be expected, will be liable to alter either the departure or the arrival of any or of all these birds; but it is not to be supposed that more than the difference of a few days will be perceived. It would likewise add much to the value of such a table, were the observations extended to every county throughout the kingdom; and we do hope that this hint will not be lost on localised sportsmen in general.

SUBJECT. 15. *The Natural and Sporting History of the Snipe.*

2667. The snipe, as found in England, presents three varieties. The first is known to sportsmen as the great snipe from his size and as the solitary also from being always found alone.

422



GREAT SNIPE.

The great snipe (*Scolopax major* Linn., fig. 422.) is a very rare bird; one shot in Lancashire may be seen in the British Museum, another also was met with in Kent. Bewick tells us he had likewise seen three specimens of a large kind of snipe:—"The upper parts of the plumage were nearly like those of the common snipe: the breast, sides, belly, and vent, white, spotted, barred, and undulated with black. It is not clearly ascertained whether this be a distinct species of snipe, or whether it acquires its bulk and change of plumage from age, and its solitary habits from ceasing to breed." Latham's description of this bird is as follows:—"Size, between the woodcock and the snipe; weight eight ounces; length sixteen inches; bill four inches long, and like that of the woodcock; crown of the head black, divided down the middle by a pale stripe—over and beneath each eye another of the same; the upper parts of the body very like the common snipe; beneath white; the feathers edged with dusky black on the neck, breast, and sides; and those of the belly spotted with the same, but the middle of it is plain white; quills dusky; tail reddish, the two middle feathers plain, the others barred with black; legs black."

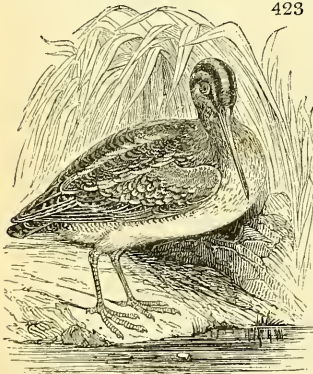
(*British Birds*, p. 49.) We may also add to this description of this rare bird, that it has "sixteen tail feathers, the five outermost being white, barred with black; belly, sides, and thighs, barred with triangular black markings. Its length from the tip of the bill to the end of the tail, eleven inches and a half; from the same to the end of the toes, fourteen inches and a half. Its weight appears from different accounts to vary from seven to eight ounces." The anatomical character of one examined is thus stated:—"Cæca one-eighth of an inch long. In the gizzard were skins of very small grubs and fibres of roots; in that of another, which had no food in it, the inner membrane was lying in longitudinal rugæ, each of which was thickly beset with conical papillæ, resembling rows of teeth. The anatomical facts which apply in a great degree to each variety of snipe, the internal structure of which (particularly of the great snipe) is strikingly analogous to that of the woodcock, as exhibited at p. 865., which confirms all that is stated by critical observers of the methods of feeding, and the matters made use of by both woodcocks and snipes. In the large snipe the portion of alimentary tract known as the cæca is a facsimile of that of the woodcock, whereas, both in the common snipe and the jack-snipe, the two branches of cæca are each an inch and a half long; but which variation appears to have no effect in altering the matters taken in, or their subsequent alteration by digestion. The great or solitary snipe, as it is called, "is not common in England, but is sometimes found in Lancashire, and also in Kent; in 1792 they were in tolerable plenty in the north of England, and are there called

the *solitary snipe*, from always being found alone and detached: others have been since occasionally shot; one, in 1798, by a gentleman of Liverpool." Latham informs us, that the "great snipe is found in Germany and in Siberia; and he once saw it among a parcel of birds sent from Cayenne, and has no reason to suppose but that it came from thence." (*Rural Sports*, vol. iii. p. 182.)

2668. *Snipes are birds of very general distribution*, and, as justly observed by Mr. Daniel, are found in every quarter of the globe, as all travellers assert, and the foreign ornithological specimens in our museums from distant countries certify. "Snipes are seen throughout the old continent, from the arctic regions of Siberia to the Cape of Good Hope; at which last place it is common: it also inhabits the islands of Ceylon and Japan. In America it is met with almost universally, but more particularly in South Carolina, where it swarms: it is frequent in Jamaica, and more common in Falkland Islands than in England. In Egypt, in the fields from whence the crops of rice are just taken, snipes are so numerous, that it is not uncommon for a person to shoot a basket full in a day. The sport is, however, fatiguing, from the light earth of the rice grounds being so deeply impregnated with water, that the sportsman sinks at every step he takes, and sometimes above his knees. Snipes arrive the beginning of November in Lower Egypt, and pass the whole winter there. In some parts of Ireland they so greatly abound, that forty-three brace have been killed by one gentleman in six hours." Snipes in winter are also found very universally spread over Great Britain, particularly they are to be met with in our marshy grounds. In the spring they disperse themselves to higher and more airy situations, and then inhabit our mountains and our moors. According to Mr. Daniel, "they begin to *pipe* the first week in April; many of them breed with us, and the nest is composed of dried grass and plants, with sometimes a few feathers; they lay four or five eggs, of a dirty olive colour, marked with dusky spots: the young appear ugly and shapeless; the mother never deserts them until their long bill is firm enough to enable them to procure their food. When disturbed much in the breeding season, they soar to a vast height, the male making a singular bleating noise, which in superstitious times was called the *campana cælestis*; and when they descend, they dart down most rapidly. The cock also, whilst the hen is sitting, poises himself on his wings, sometimes making a whistling, and frequently a drumming noise; and it is uncertain whether this noise is ventriloquous, or is produced by the motion of the wings. Mr. White says, this noise happens always when the bird is *descending*, and his wings are violently agitated. They feed on worms and insects which they find on the moist ground, as also on small snails, which last have been found whole in their stomachs: they usually have abundance of fat, which is not apt to cloy, and rarely disagrees with those that eat it: it is cooked like the woodcock, without extracting the entrails, and is every where esteemed for its delicious flavour." (*Rural Sports*, vol. iii. p. 176.) Having proceeded thus far, we shall now personally describe this prime favourite of the British sportsman.

2669. *The common snipe* (*Scolopax Gallinago* Linn., fig. 423.), provincially also called *snite* or *heather-bleater*, is thus described by Colonel Montague:—"Weight about four

423



COMMON SNIFE.

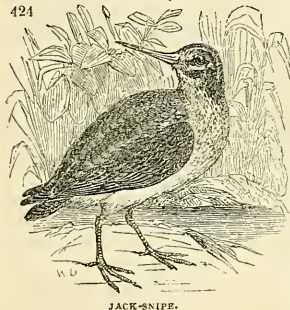
ounces; length near twelve inches; the bill three inches long, and dusky in colour; in some the base is lighter, flattish, and rough at the end; irides dusky; crown of the head black, with a longitudinal light rufous line down the middle; from the base of the upper mandible another line of the same colour passes on each side over the eyes; between the bill and eye is a dusky line; the throat white; cheeks, neck, and upper breast, mottled with black and light ferruginous patches; the back and scapulars are black, barred with ferruginous brown, and striped with yellowish buff colour in longitudinal lines; the quills are black, the first edged with white; the secondaries tipped with the same; those next the body are, with their coverts, striated, and barred with light ferruginous; lower breast and belly white; vent brown; upper tail-coverts brown, barred with black; the tail consists of fourteen black feathers, barred and spotted with dull orange red towards the end, with a narrow bar of black near the tip, where it is pale rufous; legs

vary—in some dusky or lead colour, others green." (*Ornithological Dict.* p. 469.) The common snipe breeds on all the different moors of the north of Scotland, and amongst the reedy and rushy borders of the bogs of Ireland. It lays four eggs, which, on the Scotch moors, are deposited in or under a branch of heath. The nest is lined with withered grass, the eggs are of a greenish brown, with darker spots of green brown: they are large when compared with the size of the bird, round at the great end, and sharp-pointed at the small end. Snipe remain in the north of Scotland all the year, but are more numerous during

the summer. Their nests have been found on the highest moors, and on the lowest swampy grounds of narrow arms of the sea, close by high water-mark. Of the thousands that breed in the north of Scotland, multitudes in early winter proceed southward.

2670. *On the time of the arrival of the snipe*, Mr. Daniel tells us that a Norfolk gentleman had made some interesting observations: — "They arrive in the vicinity of Norwich early in September, which is merely transitory, stopping for a day or two, or perhaps only a few hours; they are then often found in large flocks, but lie very light. At the end of October the greatest number arrive, and are more universally dispersed, and afford better amusement than earlier in the season; but immediately as the severity of the winter commences, they almost entirely disappear, and return no more until March, previous to their final departure. During frost this gentleman has searched the spring ditches, which, remaining free from ice, presented both food and shelter; but, excepting the two or three early days of frost, found very few; and he asks if any sportsman can inform him, whether they retire farther south for a milder climate, or to the rapid rills in the mountainous parts of the island. The forwardness or backwardness of the spring always regulates their return, which induced this gentleman to remark the coincidence of the time of the flowering of wild plants and that of the reappearance of the snipes. In February a few prematurely arrive, as in 1800, when upon the 20th he found several, but a frost set in and again drove them back. In 1801, between the 10th and 17th, there were many snipes in the marshes, and several wildfowl in the river, during which period the ground was covered with snow: he searched the same marshes on the 24th, and did not find a snipe. In March they again visit the marshes numerous, earlier or later, according to the spring's appearance: in that of 1800 they returned the 13th, accompanied by a great number of lapwings; on the 26th they were observed to be most numerous, and within a few days most of them left us for other countries, while some few remained to rear their offspring in this. The spring of 1801 was very forward, and this gentleman observed several snipes, on the 9th of March, on Mounthold Heath; on the 11th there were considerable numbers in the marshes, but were in flocks, and *laid very light*: by the 27th many had departed, and the lapwings, reeves, and redshanks, had begun to lie. Snipes in the Cambridgeshire fens were, thirty years ago, most abundant; those brought to Cambridge market, which at that time were all shot birds, sold from 3*d.* to 5*d.* each. In 1775 the compiler killed, in three mornings, thirty-three couple of snipes; and from having known his father's men catch them by drawing with a net in the night time, he mentioned to a person near Milton Fen his surprise that this mode of taking them had not been resorted to. The fenman inquired what sort of net was to be used, and was told a lark-net would answer the purpose of a trial; this the fenman soon borrowed, and the first night of his making the experiment caught as many snipes as a small hamper could contain: the practice soon became general, and the netted were so much better than the shot birds, that the latter would scarcely find a purchaser in the market. The price at Cambridge has increased to a shilling, and sometimes eighteen pence a piece. The Duke of Marlborough's gamekeeper, some years since, killed twenty-two snipes at one shot." (P. 179—181.) Varieties in this bird, as in most others, occasionally occur. A very curious pied snipe, noticed by Bewick, was shot near Oxford, September 8. 1789, by a Mr. Court; its throat, breast, back, and wings, were beautifully covered or streaked with white, and on its forehead was a star of the natural colour; it also had a ring round the neck and tail, with the tips of the wings of the same colour. Occasionally one or two with orange legs are seen, and a variety with a red breast has been met with. In 1803 a small flock of these was seen in Devonshire. The red breasted snipe (*Scolopax Noveboracensis*) has now and then also been met with in other localities.

2671. *The jack-snipe* (*Scolopax Gallinula* Linn., fig. 424.). Colonel Montague observes on this bird, that "it is about half the size of the common snipe, and weighs about two ounces; length eight inches and a half; the bill is nearly two inches long, of a lead colour, black at the point, and the ridge of the upper mandible light horn colour; irides dusky; the crown of the head black, slightly edged with rust colour, bordered on each side with a yellowish streak, beneath which is a dusky one; and close above the eye is another streak of a light colour; from the bill to the eye is a dusky stroke; the neck is varied with ferruginous brown and dusky, dashed with cinereous above; the back, rump, and scapulars, of a fine glossy changeable green and purple, the exterior webs of the latter deep buff colour, forming two very conspicuous lines from the shoulders to the tail; quills dusky; wing-coverts dusky, bordered with cinereous and brown; the lower breast and all beneath white; the tail cuneiform, consisting of twelve pointed dusky feathers, dashed more or less



JACK-SNIPE.

with ferruginous; legs greenish. The jack-snipe comes to us later than the common snipe, and is never known to remain in this country during the breeding season. It is found in most parts of Europe and in North America." (*Ornithological Dictionary*, p. 271.) Sir W. Jardine states that it breeds in the county of Sutherland, but Mr. W. Dunbar, of Loch-Inver, a most observant local naturalist, says, that during all his wanderings through that country, he never saw a single specimen during the summer months; and he thinks Sir William has mistaken the nest of the Dunlin or Purre for that of the jack-snipe, the eggs of both species of birds being exceedingly similar. Of the jack-snipe we may remark, that its haunts are the same as those of the full snipe, so called in contradistinction to this now under notice, which, in conformity with its dimensions, is frequently called the *half* snipe. It is rather a rare bird, is usually found alone, and gives in most cases much trouble to flush it, for it will suffer itself to be almost trodden upon before it will rise, and when it does, it wings its way so heavily as to discompose the sportsman as much by its sluggish movements as the larger variety more often does by its rapid unsteady dartings. These minikins occasionally, although but seldom, breed in our marshes. Their eggs are, according to Mr. Daniel, of the same colour as those of the common snipe. "Fermin, in his account of Surinam, says, they are seen there by thousands on the sea-shore; that it must be a bad marksman who does not kill sixty at once with fine shot; and that he killed eighty-five at a single discharge; that the flesh is excellent, but the bird so small, that a man may eat twenty at a meal. It is to be apprehended that Fermin has mistaken the *purre*, or oxbird, for the jack-snipe, as they fly in clouds that would admit such aggregate slaughter as he has described." (*Rural Sports*, vol. iii. p. 182.)

SUBJECT. 16. Snipe Shooting

425



SNIPES SHOOTING.

2672. *Snipe shooting* (fig. 425.), when the birds are plentiful, Mr Daniel very justly observes, affords excellent diversion. We ourselves, in spite of bog or marsh, in defiance of wet feet and cold nipped hands, have always considered it a most delightful one. Mr. Thornhill, however, is almost enough to dishearten the young beginner by what he says of it, which nevertheless is, under certain circumstances, not very wide of its real character. "Snipe-shooting," he says, "is a sport the best calculated (grouse excepted) to try the keenness of the sportsman, to ascertain his bottom, and if he can stand labour, water, mire, swamps, and bogs. He should be possessed of a strong constitution, not liable to catch cold, and have all the fortitude, as well as exertion of a water spaniel; he should be habitually inured to wet, dirt, and difficulty, and not be deterred by cold or severe weather." (P. 131.) Mr. Daniel draws a more favourable yet equally correct picture of it, when he says, "Snipe-shooting, when the birds are plentiful, is an excellent diversion: they are said to puzzle the marksman by the irregular twistings of their flight when first sprung; but this difficulty is soon surmounted if the birds are suffered to reach to a certain distance, when their flight becomes steady and easy to traverse with the gun: there is no reason to be apprehensive of their getting out of the range of the shot, as they will fall to the ground if struck but slightly with the smallest grain. Snipes, like the woodcocks, and many other birds, always fly against the wind; therefore, by keeping the wind at his back, the sportsman has this advantage of the bird when it rises, that it presents a fairer mark. These birds are scarcely good until November, when they get very fat. In hard, frosty, and more particularly in snowy weather, snipes resort in numbers to warm springs, where the rills continue open, and run with a gentle stream: these, on account of their long bills, are then the only places where they can hunt for food. Snipes will generally lie well to a

pointer, and some dogs have a singular knack at finding and standing them." (*Rural Sports*, vol. iii. p. 178.) We append some well described lines on the habits of the snipe in Mr. Watt's *Remarks on Shooting*. This author has chosen poetry as his medium of communicating instruction; and, in so doing, has shown great judgment in not allowing his subject to betray him into Parnassian heights or metaphoric display. But on the contrary, by an easy yet descriptive flow of language, his subject is *practically* exemplified in a pleasing and yet instructive manner, which has already called for a second edition of his work. Mr. Watt may be considered to have strong holds on public attention. He is known very seldom to miss either snipe, woodcock, partridge, or pheasant. So *dead a shot* is entitled, therefore, to the character of a master in his art, and to full credit for the excellence of his instructions.

"The snipe is hardly ever found
In woods, he's fond of open ground;
The rushy pond, the quiet brook,
But chiefly to the marshes look;
The plashy heath and boggy moor
Yield frequently an ample store:
Stick to them well when this the case is,
They very quickly change their places:
To-day the sportsman can pursue
The numerous game till all is blue,

To-morrow he goes out again,
But mayn't a single shot obtain;
Affected by the wind and weather,
They often flock away together;
Sometimes they to the hills repair,
Rising in wisps all wildly there;
Vain the pursuit; but if a gale
Should quickly from the east prevail,
Or even from the boisterous north,
Again you ought to sally forth."

2673. *It may be thought singular*, that while one tells us that snipe, of all bird shooting, is the most difficult of attainment, another will affirm that no bird is more easily brought down, provided the proper time be taken to do it in. The fact is, the manners of the snipe are unquestionably contradictory, as are those also of all birds whose vision is somewhat crepuscular, as that of the snipe, woodcock, owl, goatsucker, &c. These birds all see indistinctly in the glare, and consequently, when suddenly intruded on, rise in extreme haste, and make a very awkward display of their abilities in retreating. Mounting in such haste, they are so flurried that they twist this way and that, undetermined which direction to take, probably from indistinct vision aided by want of recollection at that moment; or it may be, in some cases, from not having ascertained the state of the wind against which they usually take their course. We think that this view will account for the hurry and disorder which the snipe evinces if suddenly intruded on by the gunner; and the twistings and turnings in his flight, dependent on his uncertainty of purpose, is that which has rendered the shooting of him, except by practised hands and cool heads, so difficult. It is thus we see, in some writings, that the snipe is the hardest to hit of all birds; whereas, in others, it is said to be any thing but difficult to bring down a snipe. In our own opinion, however, there are two methods of hitting him with moderate certainty; the one is by snap-shooting, which is a habit gained by some, but not to be critically described by any, except we regard it as a consentaneous action of eye and hand at the same moment. The other certain mode of snipe shooting is to put the gun into the hand of the cool and deliberate marksman, who, nothing flurried, waits his opportunity, and the moment the bird settles into his course, arrests that course by a shot. The little ingenious work, known as the *Oakleigh Code*, expresses the matter thus:—"The shooter will bring down a snipe, with much less difficulty, at from fifteen to twenty paces than at any other distance. The aim is thus taken just before the bird begins to make its cross flights, but before it has attained its full speed. The irregularity of its flight is of little consequence during the first and second twisting before the bird is safely on the wing, since its flight is then comparatively tardy. But let the snipe fly ten yards from whence it sprang—let it be, for instance, twenty-five paces distant from the gun, it is then at the top of its speed, and in the very midst of its sidelong, elliptical gyrations, and more than a match for the majority of shooters, especially if the day be windy." (P. 170.) Snipes certainly lie better in windy weather than in any other, and as they then usually make a momentary halt or hanging on, then is the time to fire. When they cross also, by firing well forward, they seldom escape. Endeavour likewise to get to windward of them, thereby to catch a cross shot.

2674. *Are dogs to be employed in snipe shooting?* Some decry the use of dogs altogether in this sport. We own ourselves to be but a humble authority. We have, it is true, shot snipes for more than forty years past, and that in most parts of England, Scotland, and Ireland, and as we do not remember ever to have gone out without a dog, when one could be had, our opinion on the subject is therefore tolerably well marked. In Ireland even, where men-beaters and scouts are so much used, we usually took a very steady dog. We have seen spaniels broken in expressly to snipe shooting, and most interesting and valuable aids they made, hunting only a few yards around their master, and making no cry when they flushed their game. It is true it requires both tact and patience to bring them to this, but we fearlessly assert it can be done. We ourselves for some years employed an old and very steady pointer, whose personal attachment to us was such that she lived as it were not only to do our bidding, but also to divine what line of conduct would best compass the end in view, that of securing the snipe. Be it observed also, that all pointers will stand

steadily to snipes, and likewise that the easiest shot made at a snipe is that which not unfrequently occurs in a wide open tract in a wood, where one is often found boring and scratching against the elevated earth at the edges of the moist sedgy locality. Occasionally, when a pointer is employed in snipe shooting, it will be found, that although you go even round and round your dog, yet no bird rises; in such case be assured it is a jack-snipe that is thus teasing you and your dog; therefore walk him up, and bring him down also, if you can, or he will tease you thus again and again. In snipe shooting, if the distance of a shot remains entirely with yourself, we consider that from twenty to twenty-five yards with No. 7. shot will be good practice. We, however, are aware, that some crack shooters prefer a snipe shot made at thirty or even thirty-five yards to one at twenty-five; but in such case the gun used must be a very close shooting one. For a cross shot, twenty-five yards we think is a good distance: the author of the *Oakleigh Code* says thirty for a cross or oblique shot. Experience only can perfect the snipe shooter. Instructions, however, are useful; he thereby learns to judge how his gun should carry its shot, and how he should both load it and hold it for that purpose (it should be close but regular for snipe shooting); and for the kind of shot, whether it be a straight, a crossing, or an oblique one, what suits his eye and hand best, that shooting let him pursue. Snipe shooting is a delightful and



SNIPE SHOOTING.

animating part of gunning practice when these experiences are perfected, particularly where the birds are plentiful. But snipes are the most inconstant of the feathered tribes; a frosty night will send away the whole of a vast flight that had been there the day before; and again in two days' time they may return, if open weather and a dry wind succeed.

2675. *Try your ground often.* A regular snipe locality should be tried, not only every day, but twice a day, so uncertain are snipes in fixing themselves even for a day. As the snipe usually flies up wind, when a point is made, by heading the dog or dogs, and getting the bird between yourself and them, as it rises you thereby get a fairer shot. You can, however, by taking a zigzag direction, occasionally get them from both your own hunting and the winding of the dogs or dog. During a brisk wind, the chances are in favour of the shooter's directing his steps down wind; for should a snipe rise, it would soon turn, and in making it, will certainly present itself favourably to the ready shot. If, on the contrary, the bird pursues a straight forward course, give it fair law or you will blow it to pieces; it also moves steadier when allowed a few seconds to pursue its flight.

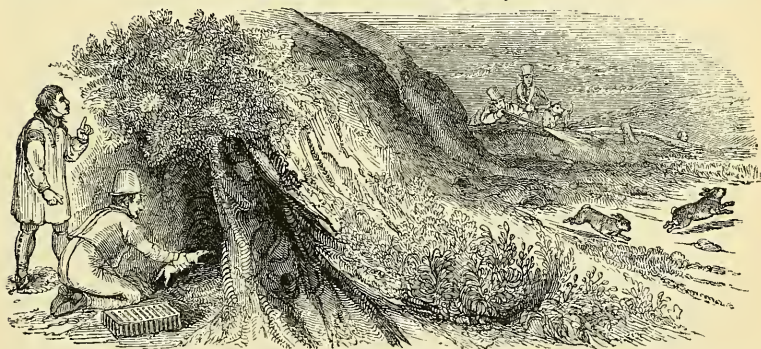
2676. *Shooting the jack-snipe* has given rise to many a tough story—some true, some suppository; for in truth these minikins are to many extremely difficult to hit. Even the Toomers, who never failed to mark a penny-piece thrown up, were shy at firing at a jack-

snipe, fearing the laugh which would follow should they miss him, as many excellent shots had done before them. When Mr. Molloy was quartered at Geneva Barracks, Ireland, he regularly equipped himself for shooting, and always sprang a jack-snipe, which he fired at, and followed. The bird used to pitch so close to him at times, that he was confident he had shot it, and used to run to take it up, when, to his great surprise, it would rise and fly a little further. He actually acknowledged he fired one day eighteen times at this bird; and after shooting at it for the whole season, he happened to be crossing the bog it lay in, when he put it up, and exclaiming, "There's my old friend," threw his stick at it, and killed it on the spot. Whenever after any of his brother officers found a jack-snipe, they were always sure to say, "There goes *Quartermaster Molloy!*" Snipe shooting is likely to become even more popular than heretofore, by the methods of making waterproof boots; and as they can now be had so pliant as to draw up the thigh also, many tender sportsmen will fearlessly venture forth.

2677. *The localities for snipe shooting.* If it be asked, where it is to be met with in the greatest perfection, we should unquestionably say,—in Ireland: that land of sporting and of good sportsmen. You can hardly be disappointed of this sport there, locate yourself where you will, except you go to the barren rocks on the sea-shore. Mr. Thornhill, at Charleville, has frequently shot twenty brace in a day; and he further remarks, that, let the number shot be as great as it may, no diminution of the birds can be observed. Both North and South Wales also furnish excellent snipe shooting, as well in their mountainous as in their more level districts. From the numerous lakes which are found there, wisps of these birds are certain to be met with. Scotland likewise presents them in plenty on its mosses, and around its lochs. In the moister grouse localities, they are also to be found in great numbers; wisps of twenty or thirty are common. In many parts of England they are not infrequent visitants, and in some of its counties they abound. In the Essex Marshes their numbers are great, and wherever sea-coast levels are met with, snipes are there to greet the sportsman. In Cambridgeshire, Lincolnshire, and Northamptonshire, they are found at particular seasons in vast flocks. In August, great numbers of professed snipe shooters assemble at the Whittlesey Wash, where most excellent amusement may be gained, not only from the mature birds, but also from the young ones, which are bred there in profusion. Exclusive of the snipes in this sporting Arcadia, which, however, begin to leave in October, ruffs, reeves, redshanks, and plovers, are likewise met with. Stern winter having passed away, the professed snipe shooter wends his way in March to the Stilton Fen, well known as the chosen resort of these birds, which shift their ground from the bog to the reed-shoals at this time, and from these back again to the bog, as circumstances direct the change. A dog is seldom used here; a small one would probably be smothered in the mud, and a large one of any kind, except a retriever, would be useless. The East Riding of Yorkshire also presents excellent snipe shooting: indeed, this bird is so universally dispersed over Great Britain, that it is hardly possible for any one to locate himself in any open country without meeting with it.

SUBJECT. 17. *Rabbit Shooting.*

427



RABBIT SHOOTING.

2678. *We have been so long hunting the feather, that we will now take a turn at the fluck;* and if the rabbit be not numbered by the sportsman among game animals he is yet of so much consequence as to be especially under the protection of the law, and many very crack sportsmen of our acquaintance are sufficiently ready to attend on a rabbit shooting excursion (*fig. 427.*). Whatever raises the expectation, and yet leaves the gratification expected a matter of some uncertainty, is sure to interest us more even than a settled certainty of the coming event. The spaniels are questing for rabbits within the close tanglings of an

extensive wood; their merry cry bespeaks them on the scent; the sporting attendants spread here and there, all eye, and all ear, to see the quick dart of the rabbit across the path, or to hear the leaves rattle, and the small boughs give place to his dashing forward. See! there he crosses the path, a shot is fired; the nimble spaniel is seen racing over the same tract in his wake scenting the stain as he goes. A squeak is heard, and the nearest sportsman flies to the spot, crying dead! dead! and presently returns with the prize. This enlivening scene is enacted again and again, and when the copse has failed, the neighbouring hedgerows are tried, which, if they have much furze, are sure to make excellent hides for these nimble animals. Rabbit shooting in such cover is very pleasant and lively sport, and with such hardy terriers or spaniels as will not only follow them in all their tortuities, however thick or tangled, as the wire coated will do, the sport is gratifying in the extreme. We have had a game terrier on such an occasion that has frequently returned home almost covered with blood, but particularly his fore-quarters, arms, nose, and ears, at least what was left of them, for he was a crop; and yet it was seldom, with all this scratching, that his eyes received any injury; a full proof that he also, spaniel-like, hunted principally by scent. The sportsman in this shooting must be on the alert, and must place himself as the cry of the dogs directs him, to look sharply for the darting out of the rabbit, which, be it remembered, is very unlike that of the hare; and hence so many hare shooters fail in rabbit shooting practice. The dart of the rabbit is quick in the extreme; that of the hare, except the dog be close to her, is more quiet; indeed she often steals out rather than flies, and pausing a moment to look around, then decamps. The gliding of the rabbit is so rapid that it is necessary either that the gunner have his gun on the cock, or at least that his thumb be on it, as not a moment should be lost; thus it is that snap shooters succeed best in rabbit shooting; the smallest hesitation on the part of the shooter loses this nimble animal, who crosses a path with incredible speed. Indeed, if a fair portion of practice in rabbit shooting will not make a quick shot, the case is hopeless. The fences and coverts likewise near a wood are often the resort of rabbits, particularly if showers have made the levels of the wood in a dripping state. Here, leaving the wood and its drippings, they locate themselves among the thickest cover of the hedgerows, and, if furze be planted there, it is a sure hide for them. Here two, three, or even more sportsmen judiciously placed, having with them rather small dogs used to the sport, and tough hided, with a moderate portion of tongue, who will follow up the game with their merry cry, while ever and anon a rabbit is forced out, and driven across the path, may find ample employment for their guns.

2679. *Rabbits are also shot from trees* in situations where they are plentiful. They do not by this method seem to smell the destroyer aloft, and so may be shot without much difficulty; for although the report of a gun will send almost the whole either into their cover or to ground, in a very few minutes they will reappear, and offer themselves again unconscious victims. In an open warren Colonel Hawker recommends that you keep a few hurdles, but bushed we suppose, and approach or wait for the rabbits under cover of them, carefully, however, avoiding to go to windward. Were these little gentry less wary, we should not willingly detail these stratagems; but being, as Mr. Watt very justly observes,

"More difficult than hares to hit,
They frequently appear to fit
Like shadows past one; — good, indeed,
Is then the aim that bids them bleed.
If you would see them nicely stopped
In the thick wood, you must adopt
Snap shooting, for you 'll seldom there
Have time to take them full and fair:

E'en lost to view, advance your gun
Quickly to where you *think* they run;
Regard not grass, nor bush, nor briar,
Through each and all that instant fire.
Bang! it is well — you saw him not,
And yet you 've killed him on the spot."

Remarks on Shooting, 2d edit. p. 109.

2680. *Warren rabbit shooting* is also much admired by some, and is but little thought of by others, ourselves being one of the latter number. We should hope no liberal-minded sportsman would watch the regular warren of the dealer in rabbits, yet we fear it is sometimes done: nay, we have heard of some who, although called gentlemen, have taken a boy with a ferret purposely to bolt the rabbits when the warren was engaged. In some parts where the country is of a light sandy soil, rabbits are tolerably numerous, although not claimed as private property; and such a locality presents a fair opportunity for the amusement of ferretting them, which, to be well done, must be operated quietly and adroitly. Much, however, will depend on the intention of the person or persons who are the performers. We mean to allude only to those who bolt the rabbit, that it may by means of the ferret be shot at as it comes out, giving it fair law. We profess not to have seen much of the practice of ferretting rabbits. Without intending it as a pun, it has, in our opinion, a poaching smell about it; and yet it is an amusement very much relished by some genuine sportsmen of our acquaintance. The ferrets used must be copped, that is, muzzled (they occasionally, we are sorry to say, have their mouths sewn up). Thus unable to seize the rabbit by the throat, they are turned into the burrows. Attention must now be paid by the shooters, who stand at moderate distances from the rabbit-holes, from whence they

watch the bolting of the game from the different holes out of which the ferrets, or cats, as they are called by the regular ferretters, have driven the rabbits.

2681. *Rabbit shooting on open warrens is legitimate sport*; and although the numbers here are not great, there is often sport enough obtained to repay the search after them. We need not state the degree of caution necessary in the approach to these wary gentry. It is well therefore never to advance in a straight line, or even look directly towards them; walk leisurely along in the face of the wind; stoop and pick, or seem to pick up, a bough, or turf, or to examine any matter before you; and such conduct will often throw them off their guard. While doing this, if a dog is with you, keep him close; your clothes also should be dark, so as not to be seen on the approach a long way off. When you have ventured as near as they will allow without retreating to their earth, then stoop. One we knew used to lie down with his jacket drawn over his head; he would every now and then take a peep, and if he found that the rabbits had not fled, he was convinced his stratagem had effected his present purpose. He next deliberately crawled on his hands and knees, not straight towards them, but in a zig-zag direction, with jacket so much over his head, that he really looked more like an overgrown hog than a man; and in this way, he has assured us, he seldom failed in shooting one and sometimes more, if he could get them on a line. We are afraid we must consider this as poaching, or pot shooting; it certainly was a gain gotten under false pretences: but his reply was, that all is fair in love or war. When storms arise, the intervals between are often favourable for getting near them, particularly when, as already observed, the wind blows from them to you, as it ought to do in the stratagem just detailed, to render it more certain. When a number are come upon suddenly at the edge of a wood frequented by them, it often happens that the old ones will immediately take the covert; but not so the young ones, who prick up their ears, and perhaps raise themselves up to examine you: now take your shot.

2682. *There is so much to interest every one in the natural and commercial history of the rabbit*, that we are sorry our confined limits will not allow us to enter somewhat at large into these particulars. The similarity between the rabbit and the hare is such in many respects, that were it not that equal dissimilarity exists between them in even more respects, we should consider them as kindred relations of the same group. But so far is the one removed from the other, that a hybrid or animal engendered between the two, we believe, was never known. It is true that some years ago a very large variety of the rabbit made its appearance, but from whence derived has not, we believe, been ascertained; but in all probability it was brought from some distant country. It was large, and very much the colour of the hare; it showed much bone, with length of body. The flesh likewise was high coloured and savoury; and, when it was dressed after the hare fashion, was no mean representative of that admired game. The proof of its being a true rabbit, however, was manifested by its interbreeding with its own kind and with the common rabbit; but between it and the hare no intercourse was ever observed, nor were any hybrids ever bred; which set the matter at rest, and furnished an additional proof, that the rabbit and the hare are each a distinct animal *sui generis*. Having heard nothing of it of late, we presume the variety itself to be out of date, or that it has blended itself by interbreedings with the olden English rabbit; and as we know what great alterations in the form and qualities of animals are occasioned by domestication, under which the size, the colour, and the very habits, may be made to undergo vast changes, we can readily suppose that such has occurred here. We see this exemplified in the animal before us, now become of much importance both as an edible and as aiding in clothing us.

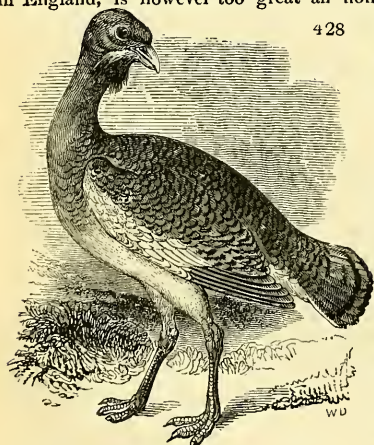
2683. *Four kinds of rabbits are acknowledged among dealers and fanciers, — warreners, parkers, hedgehogs, and sweethearts*. We hardly need intimate that the warrener is of the kind we have already described, and given some representation of in our embellishment of rabbit shooting. The hedgehog breed we have also noticed when we described the certainty of finding them in hedgerows and in thick wood covers where the soil was not sufficiently sandy to be made a subterranean dwelling. Deprived of such a resource, they become naturalised to living above ground; the coat, however, loses some of its furry quality. The *parker* rabbit lives on the upland likewise, as in gentlemen's parks, pleasure grounds, and broad open grazing grounds, and it breeds in any convenient spot. Between this and the last variety, it requires the eye of the professed warrenner to distinguish the difference. *Sweethearts* are the tame varieties, now multiplied into innumerable diversities of size, character, and colour, from the olden to the lop-eared; and from the middle-sized to the monster of ten pounds' weight; indeed, one exceeding fifteen pounds was exhibited at Lord Somerville's show. The fecundity of the rabbit is extreme, and it was a bountiful ordination of Providence to make it so, seeing it has little tendency to do injury, but vast capabilities to render us essential services. "Rabbits," says Mr. Daniel, "will breed at six months old, bear seven times annually, and bring five young ones each time; supposing this to happen regularly during the space of four years, and that three of the five young at each kindle are females, the increase will be 478,062. The calculation has been made from eight young at each of the seven kinds, amounting to 1,274,840: but that is much too

high, for the wild rabbit was never known to have eight at two successive kindles, and perhaps five is beyond the fair average. Under the first statement, being overstocked with these animals might justly be feared; but man, birds, and beasts of prey, make great devastations among them. The rabbit affects a temperate and warm climate, and bears great cold with difficulty. In Sweden they are obliged to be kept in houses. Spain is their native country. The Island of Minorca is very remarkable for its growth of rabbits, but their flesh is so rank that, instead of serving as food, they are an incumbrance to the people inhabiting it, who to prevent the land from being overrun by them, are called upon by the governor to give their assistance two days in every year to destroy them; and in the time of the Romans they once proved such a nuisance in all the Balearic Islands, that the inhabitants were obliged to implore the aid of a military force from Augustus in order to exterminate them. Lincolnshire, Norfolk, Suffolk, and Cambridgeshire, where the soil is sandy, are the counties in which they are most plentiful, whence immense numbers are brought for the supply of the London market." (*Rural Sports*, vol. i. p. 577.) The history of the rabbit is further treated on in his work, to which we would refer the reader; and should his inquiries extend to the culture and nouriture also of this animal, he will find much to interest him in Mowbray's *Treatise on Breeding and Rearing Domestic Animals*.

2684. *Of hare shooting* we have little to say, farther than when engaged in other shooting, and a hare crosses one's path, flesh and blood, as the phrase runs, can hardly resist the temptation of raising the gun at her; and some how or other the sympathy between the hand and the eye is such, that the trigger is pulled; and, as puss is a pretty full sized object, chances are against her. But to go abroad purposely to shoot a poor unfortunate animal so eternally snared, so many months hunted by hounds, and so many coursed by greyhounds, is giving the odds against her. If however, brother sportsman, you must have a shot at puss, should she rise before you, or should she cross your path, aim at her head, and she will be a more certain shot and much cleaner killed than by any other aim; and do the same also if she be running in a straight line from you. If you have a double gun, and the second barrel is loaded with shot one or two sizes larger than those in the first barrel, give her that; she will be cleaner killed that way, and will be certainly pulled up at any distance within sixty yards "*if your powder be straight.*" Colonel Hawker remarks, that when a hare is coming towards you do not shoot until she be very close, otherwise her skull will ward off the shot, and for which caution there does really appear a call; nevertheless, the only time we believe that we ever had an opportunity of taking a front shot at a hare, was when some shooters in a wood had disturbed one who was making her way down a fallow field which we were crossing. Poor puss received our foreright discharge at about thirty yards' distance, and the velocity of her previous pace rolled her over and over. One shot had penetrated her eye, and several her chest. Of shooting a hare on its form we have only to say, that none but the strongest necessity can excuse it.

SUBJECT. 18. *The Greater Bustard.*

2685. *The greater bustard* (*Otis Tarda* Linn., fig. 428.), although now seldom met with in England, is however too great an honour to the country to be passed over without notice.



GREATER BUSTARD.

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We hardly need say that it is the largest of our land birds, being as much as four feet long, and from twenty-five to thirty pounds in weight. It also merits our attention from its connecting links in ornithology, some of which assimilate it with gallinaceous birds, and others with the ostrich and cassowary. Of the former connection a proof is offered in the difference of colour between the flesh of the pectoral muscles and those of the other parts of the breast, a character common to many of the *Gallinae*. This variation to a supposed similarity of colour in the whole flesh of the breast in this as in many, but not in all birds, gave rise to a curious oversight. "In 1804," Colonel Montague tells us, "one was shot and taken to Plymouth market, where a publican purchased for 1s. what would have fetched 2 or 3 guineas where its value was known; this rare wanderer was, however, so entirely unknown, that it was rejected at the second table as improper food, in consequence of the pectoral muscle differing in colour from the

other parts of the breast, a circumstance not unusual in birds of the grouse kind. Some country gentlemen supping at the inn the following evening, and hearing of the circumstance, desired that they might be introduced to the princely bird, and partook of it cold at

their repast." (*Ornithological Dictionary*, p. 63.) This character, which has given rise to its classification with granivorous birds, is however erroneous. "Its gizzard," Sir Everard Home says, "is evidently not to be classed with them, but is more like that of the raven. It has a thick cuticular lining, and a weak digastric muscle; but the gastric glands are uncommonly large, so as to have attracted the attention of M. Perrault, who has given an account of their structure, saying, that they are conical tubes, terminating in a point at one end and open at the other, and are larger than in any other bird except the ostrich, whose solvent glands he appears not to have examined. 'As I have not,' says this gentleman, 'had an opportunity of examining these glands in the bustard, I must rest this account of the structure of the glands upon M. Perrault's authority, as stated in the work on *Comparative Anatomy*, published under the patronage of Louis XIV. in 1676.' Understanding that the bustard in India is a favourite bird for the table, and that all bustards are there considered to be granivorous birds, I was unable to reconcile this circumstance with the structure of its digestive organs; but this difficulty is solved by the following account of the mode of feeding this bird, which is taken from Mr. Hunter's notes upon this subject, who kept a cock bustard a whole summer in his garden. It died in November, apparently from the cold of the winter. He killed mice and sparrows with his bill by pinching their heads, and then swallowed them whole, even when of considerable size. It was easy to observe a large mouse going down his throat, making a moving tremor till it came to the turn of the neck; it then moved backwards, and, although out of sight, yet its progress was traced by the feathers between the shoulders separating and closing again as soon as it passed into the gizzard. It was fond of worms, and, while the gardener was digging, stood by him, and looked out for them. It ate the buds of flowers, and particularly of roses; also the substance of cucumbers, but not the outside. From these observations the bustard is evidently fitted more particularly to live on animal food." (*Library of Entertaining Knowledge*, FACULTY OF BIRDS, vol. iii. p. 154.) Mr. Daniel's description of the bustard being derived from Bewick, is likely to be correct, and is as follows:—"Its bill is strong, and rather convex; its eyes red; head and neck ash coloured; on each side of the lower bill is a tuft of feathers, from five to nine inches long; the back is barred transversely, with black and bright rust colour; the greater quill feathers are brown, the belly white; the tail consists of twenty feathers, the middle ones are rust colour barred with black, those on each side are white; the legs are long, naked above the knees, and dusky; it has no hind toe; its nails are short, strong, and convex, both above and below; and the bottom of the foot is furnished with a callous prominence, which serves instead of a heel."

2686. *The female is said to be about half the size of the male*; but we ourselves had been led to believe, from good authority, that the difference stated between the male and female bustard was erroneous; and a note in Mr. Daniel's account confirms our opinion that such is the case, or, at least, that her proportions are nearer to his than are set forth:—"On the 29th of September, 1800, Mr. Crouch, of Burford, shot a hen bustard on Salisbury Plain, which measured from tip to tip of the wings full six feet, and upwards of three feet from the point of the beak to the extremity of the tail: perhaps, however, this unusual size was the result of age. This bird was killed at the distance of forty yards, with a common fowling-piece, and with such shot as is generally used for partridge shooting. There were two other bustards in company with the one shot, neither of which appeared to be hurt." The crown of her head is of a deep orange, crossed with transverse black lines, the rest of the head is brown; the lower part of the forehead of the neck is ash coloured; the female wants the tuft on each side of the head. In the rest of the plumage she resembles the male, except that the colours of the back and wings are more dull: the male has however an essential distinction, being furnished with a *pouch*, capable of containing nearly seven pints of water, the entrance being immediately under the tongue. Dr. Douglass first discovered this singular reservoir, which the bird is supposed to fill with water, as a supply in those dreary plains where it is accustomed to wander. It is also, without doubt, of use to the female while sitting, which is generally at a distance from water, or for the young, until they can leave the nest, the male bird, without doubt, furnishing the supply. A further use of it has been observed at Morocco, where they fly the hawk at the bustard; on the attack of the hawk, it has been known that the bustard has spirted out the water against the assailant, and has by this means baffled the pursuit of its enemy. The female makes no nest, but, scratching a hole in some dry field, drops two eggs upon the ground, as big as those of a goose, and of a pale olive brown, sprinkled with small dark spots, resembling the brown colour of the plumage; upon these eggs she sits for thirty days. The same jealousy which marks the conduct of many other birds, is observed in her also. If in her absence from her nest in quest of food any one handles the eggs, she immediately abandons them. The bustard feeds on corn and vegetables, and upon those large earth-worms that appear in great quantities on the downs before sun-rising in the summer; these being replete with moisture answer the purpose of liquids, and enable them to live long without drinking on these dry and extensive tracts, and without having recourse to the admirable magazine before mentioned: like the ostrich, it also swallows small stones,

bits of metal, &c. Buffon relates, that in the stomach of one opened by the academicians, there were found (besides small stones) no less than *ninety doubloons*, all worn and polished by the attrition of the stomach, but without any appearance of corrosion. Bustards were formerly more frequent in this island than at present; they then inhabited most of the open counties of the south and east, from Dorsetshire as far as the Wolds in Yorkshire. In France they are seen in the spring; in England they were in greatest numbers in autumn; and were now and then met with at that season in large turnip fields, near the Downs in Wiltshire, in troops of fifty, or even more. In Sir Robert Sibbold's time they were found in the Merse, but are now supposed to be quite extinct in Scotland. At the time alluded to they usually kept to their old haunts, seldom wandering above twenty or thirty miles; they run most rapidly, but very slowly take wing; they are sometimes caught with greyhounds, and the chase is said to afford excellent diversion. In Hungary this bird is so common as sometimes to be seen four or five hundred in a flock. Mr. Daniel also tells us, that "in returning out of the fens in the dusk of the evening from snipe shooting some years since, he shot at a bustard which flew very low over his head: he did not at the time know what bird it was; and although the gun was charged with very small shot, the bird, from the short distance when struck, was so wounded as to be caught by a shepherd within three hundred yards of the place the morning after. This bird weighed nearly twenty-eight pounds, and the shepherd sold it for a guinea to a gentleman at Cambridge." (*Rural Sports*, vol. iii. p. 27—29.)

The bustard was, within thirty or forty years, to be met with on Salisbury Plain, as well as on some other large plains of England. The Wiltshire shepherds state, that "their young ones were frequently taken by their dogs on the downs before they were capable of flight; and the bustard eggs were also eagerly sought after for the purpose of hatching under hens. Half-a-guinea was no unusual price for an egg, and ten or twelve guineas a pair have been given for young birds not full grown. A person at Tilshead, contiguous to the Downs in Wiltshire, is reported to have reared a great many in this way; and the consequence has been, or eventually will be, a total extinction in a few years." (*Ornithological Dictionary*, p. 63.) Formerly the bustard might be met with in the Wolds of Yorkshire, and some open parts of Scotland, but it is now, I believe, never met with here. It is yet common in Russia, Germany, and Tartary; but Temminck says it is rare in Holland. Is it not singular, however, that so accomplished a naturalist as Temminck should not have been aware of the aqueous reservoir in the throat of the male bustard? and such must have been the case, for he does not even allude to it. In India a very large bustard is common, but is little noticed by European naturalists. Its length from bill to tail is three feet nine inches; height four feet three; breadth eight feet two; weight about thirty pounds. Its bill two inches three quarters long, but more slender and less arched than the European species: some seen in the elevated plains of southern India are much taller than these even. They walk very fast, but require much pressing to make them take wing, when their flight is slow and steady, which enables the Indian marksman to make sure of them with his rifle, particularly as they seldom mount aloft like the heron, although their flight much resembles it in manner, and with its legs and feet drawn up like that bird. Bustards were always much sought after, particularly the young hen, the breast of which exhibits, it is said, when cut for the table, numerous triangular cavities; which we from analogy should judge to be receptacles for air to lighten the bird in its flight.

2687. *The shooting of the bustard* was once a very favourite amusement among the gentry. Stratagem could seldom succeed unless the device was very adroitly managed. Carts and other vehicles, in which a gunner was concealed, have been made use of, which the simple birds allowed to come near them, and from which they were fired on. The stalking horse was in use in Markham's time, and long since that time the shepherds and others, concealed by a hurdle covered with boughs and carried before them, so deceived the birds as to enable the pursuer to get a successful shot at one or more. They were also, as we learn, coursed, and being extremely averse to take wing, depending on their speed in running which is great, they were occasionally overtaken by the greyhounds, and if not killed on the spot, were held until the horsemen reached the scene of action. Salisbury Plain, which was one of their last resting-places, has, we believe, not infrequently exhibited such a scene, but not of late years.

2688. *The little bustard* (*Otis Tetrax* Linn.) is, indeed, a very diminutive type of the large species, weighing only twenty-five ounces, and being but sixteen inches and a little more in length, and thirty-five in breadth with outstretched wings. Bewick says of it, that "it is very uncommon in this country;" and continues, "we have seen only two, both of them females. It is, however, common in France, where it is taken in nets like the partridge, but it is not an easy prey, being a very shy and cunning bird; if disturbed, it flies two or three hundred paces, not far from the ground, and then runs away much faster than any one can follow on foot. The female lays in June, to the number of three or four eggs, of a glossy green; and, as soon as the young are hatched, she leads them about as the hen does her chickens, and they are able to fly about the middle of August." (*British Birds*, p. 360.)

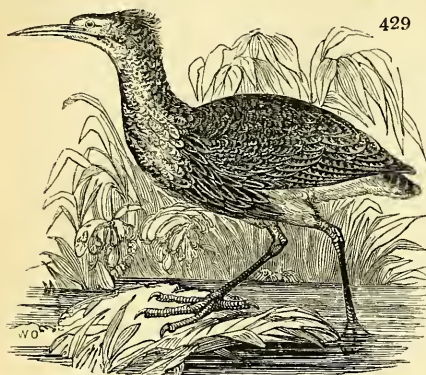
SECT. III. *Fenbird Shooting.*

2689. *Fenbirds* are somewhat difficult to individualise, as many that uniformly breed in the fens, yet rove at large in very different localities during the first part of the year. The fens, alas! the former scenes of the resort of the lover of wildfowl shooting generally, are no longer what they were. Mr. Daniel notices them in his time, and as we also remember them "When they were vast tracts of morass covered with water, and very shallow, except in the drains, or some particular places; they abounded also in fish, such as pike, perch, tench, roach, bream, and eels. Reeds and flags grow almost universally throughout the fens, and yield shelter to a great variety of waterfowl: these reeds are also a sort of harvest to the neighbouring inhabitants who mow them annually, and, when procured, they prove a much more durable thatch than straw, and not only cottages but very good houses are covered with them. Stares or starlings, which during winter resort in myriads to roost in these reeds, are so very destructive in breaking them down by the vast numbers that perch upon them, that a reed bed has been damaged in value to the amount of upwards of 100*l.* in one night: the people are therefore very diligent in driving them away, and in their attempts to do so are at great expense in ammunition to free themselves of these troublesome guests. Stocks of reeds, properly harvested and stacked, are often, to a fen farmer, worth 300*l.*" (P. 199.) The birds however, which even yet shelter here, are much too numerous to be individually described. Mr. Daniel himself, a very zealous fen shooter, thus enumerates them; and as what follows from his pen illustrates the former state of these (to sportsmen) celebrated localities, we shall make no apology for introducing it: — "Here might be seen wild ducks, geese, garganies or summer teal, pochards, shovellers; and teals, pewits, gulls, terns, herons, bitterns, coots, waterhens, watterails, ruffs and reeves, knots, godwits, redshanks, lapwings, and many others also, breed here and rear their young.

"Should any Cambridgeshire man, who was a fen shooter thirty years ago, honour this book with his perusal, he will not wonder at seeing the name of Old Merry of Stretham Ferry, mentioned as a truly scientific conductor of the kind of sporting to be met with in the fens. In his knowledge of the haunts of the different species of birds which visited them, he was most precise; and in the navigation of his punt (a small boat) along the ditches, which are, in fact, the only roads through the fens, his judgment and assiduity were alike conspicuous: he knew when a drought had lowered the water, where he could make good his point; and frequently, whilst shooting parties with other guides were wearying themselves with towing, or from the noise occasioned by being towed, all the birds in the vicinity were disturbed, Old Merry was steering his punt silently to the scene of action; and in the fogs, which were often there so thick as to exclude objects at the smallest distance, or in the dark, he was equally collected, and knew how to proceed in the morning, or return at night, in spite of all obstacles. As a marksman he was extraordinarily expert; with a gun upwards of six feet in the barrel, and stocked by the village carpenter, and although its weight was such that nothing but a most powerful arm could extend and elevate it, yet he would kill a snipe flying with it. Before exhibiting this proof of dexterity, he usually requested to be supplied with a fresh charge, in lieu of what he threw away (as he termed it) after so worthless a bird: the charge of this *demi-culverin* was two pipes and a half of powder and three of shot, and the wadding was a little dry sedge, of which he always took a whisp in the punt. At wildfowl, either single or in trips, he was a fatal shot: from long habit his eye and ear were both singularly keen at their approach in the air, and his gun generally verified the truth of this observation when he fired at them in the twilight, or in the fogs; and, for the most part, his caution to look out at the coming of the birds was so exact, that no person could well complain of want of shots if they obeyed his directions: his knowledge (either from the wind, or some other cause) in seeing the wildfowl fly, to what particular spot they would direct their course, was accurate, and his punt was certain to be either in a direction to intercept them in their flight, or to be concealed among the reeds close to where they assembled to feed at eve or morning. Old Merry had not been much troubled with education: rude as the country in which his occupation lay, he possessed, perhaps like *that*, materials which would have received and well requited the labour of cultivation; he had an innate civility, and evenness of temper which very few could ruffle, always preserving the most unassuming behaviour; and, whilst reciting a fund of fen shooting anecdotes, was ever indefatigable in procuring amusement for his employers." (*Rural Sports*, vol. iii. p. 201—203.) We do not remember Merry himself in our journeyings in this direction; but we well remember to have heard the sportsmen of his neighbourhood talking of his vast experience in fen shooting, and how constantly he was engaged by gentlemen fen shooters who visited these localities. Extended as this account is, we hope, from the interesting nature of the locality, and the peculiar aptitudes of the old fenman Merry, we shall stand absolved for introducing it.

SUBJECT. 1. *The Bittern.*

2690. *The bittern* (*Ardea Stellaris* Linn., fig. 429.) is not very unlike the heron in figure, but is smaller, and wears a different plumage. "The feathers," says Colonel Montague,



THE BITTERN.

"On the top of the head are black; those on the hind head, neck, and breast, are long and loose; the plumage in general is of a dull pale yellow, elegantly variegated with spots and bars of black; the greater covert and quill feathers ferruginous, regularly barred with black; tail short; legs pale green; toes and claws very long and slender, the middle claw serrated on the inner edge. The female is rather less, the plumage not so bright, and the feathers on the neck not so long and flowing as in the male." (*Ornithological Dictionary*, p. 36.) Its bill is much shorter than the bill of the heron, and is weaker also. It is truly a fenbird; but we cannot agree with Mr. Daniel, or with Latham and Temminck, that it is very common in England; on the

contrary, much as we have travelled, we do not remember to have seen more than a dozen; the last we saw we shot as it was escaping from the reeds surrounding a mill-pond in the neighbourhood of Lymington, Hants, a locality admirably adapted for this bird to be found in, and yet the miller told us he did not remember to have seen more than one before, although he had lived on the spot several years. It is, however, a fenbird, and it remains with us the whole year, making its nest of rushes among the reeds about April. "The female lays from four to six eggs, of a pale greenish ash colour; the young are produced in twenty-five days, and are naked and ugly, appearing almost all legs and neck; and they cannot venture from the nest until twenty days after they are hatched, during which time the old birds feed them with slugs, small fish, or frogs. The hawks which plunder the nests of most of the waterfowl, seldom dare to attack that of the bittern, the old ones being always so alert in defence of their offspring. In February and March the males make a deep lowing noise, morning and evening, which ceases after the breeding season." (*Rural Sports*, vol. iii. p. 232.)

This *booming* of the bittern, or *lowing*, as Mr. Daniel calls it, has often been noticed by writers. Colonel Montague thus observes on it:—"Those who have walked in a summer's evening by the sedgy sides of unfrequented rivers, must remember a variety of notes from different waterfowl; the loud scream of the wild goose, the croaking of the mallard, the whining of the lapwing, and the tremulous neighing of the jack-snipe. But of all these sounds there is none so dismally hollow as the *booming* of the bittern. It is impossible for words to give those who have not heard this evening call an adequate idea of its solemnity. It is like the interrupted bellowing of a bull, but holliower and louder, and is heard at a mile distance, as if issuing from some formidable being that resided at the bottom of the waters. This is the bittern, whose windpipe is fitted to produce the sound for which it is remarkable; the lower part of it dividing into the lungs being supplied with a thin loose membrane that can be filled with a large body of air, and exploded at pleasure. These bellowing explosions are chiefly heard from the beginning of spring to the end of autumn, and are the usual calls during the pairing season. From the loudness and solemnity of the note, many have been led to suppose that the bird made use of some external instrument to produce it, and that so small a body could never eject such a quantity of tone. The common people are of opinion that it thrusts its bill into a reed that serves as a pipe for swelling the note above its natural pitch; while others imagine that the bittern puts its head under water, and then, by blowing violently, produces its boomings. The fact is, that the bird is sufficiently provided by Nature for this call; and it is often heard where there are neither reeds nor water to assist its sonorous invitations. It hides in the sedges by day, and begins its call in the evening, booming six or eight times, and then, discontinuing for ten or twenty minutes, it renews the same sound. In Scotland the sound of the bittern is so very common that every child is familiar with it, though the birds, from being shy, are not often seen. The poet Thomson seems to have had a very erroneous notion of the manner in which the bird produces the noise, when he says,

"——— So that scarce
The bittern knows his time with bill engulfed,
To shake the sounding marsh."

On the contrary, I have repeatedly remarked that the bittern usually booms while flying high in the air: its lofty spiral flight is, indeed, a matter of common remark: —

“Swift as the bittern soars on spiral wings.” — *Southey*.

A line which, I may remark, is not very ornithological, inasmuch as neither the bittern, nor any other bird, has spiral wings. Southey, however, seems to be well acquainted with the boom of the bittern: —

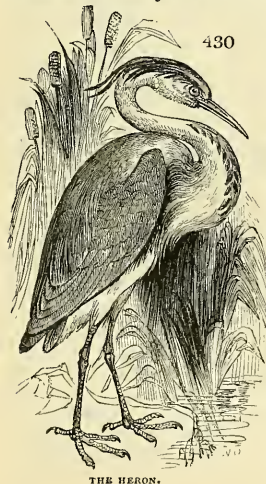
— “At evening, o’er the swampy plain,
The bittern’s boom came far.”

(*Ornithological Dictionary*, p. 37.) On the above passage, Mr. Dunbar remarks: — “In Scotland this bird is now much rarer than in England, and, instead of its sound being ‘familiar to every child,’ it is so scarce that not one out of a thousand has seen it, or heard its booming cry. In the winter of 1830, two or three specimens were killed in the north of Scotland, and a few in the south, but since then the bird has been very seldom seen. To our knowledge the bittern does not breed in Scotland, nor does it habitually breed in any part of England, though we do not question that a few some time or other have bred in the fens. At the present epoch, though all England should be searched during the breeding season, we feel confident that no bittern’s nest would be found.”

2691. *The shooting of the bittern* is not a very great achievement. It rises heavily, and having risen, it wings its way, if it have not been disturbed, almost as heavily; but when it has been suddenly flushed, it often rises rapidly in a spiral ascent, and having gained a sufficient height, it makes its way off in a direct line, and is then by no means an easy shot. It will be fortunate, in such case, should the sportsman have a double gun; for, in the first place, it may elude the aim by its irregular rising, and it may take more to bring it down than he is prepared with; and, in the next, its spiral gyrations will require both charges, and good marking into the bargain. We therefore would recommend, if the double gun be in hand, that the moment the bittern rises it may receive a shot, as its rising is often so unsteady. If it be making off in a direct line, it may be left to the shooter’s discretion, and one well directed shot will be better than two, as it will disturb its beautiful plumage so much. Be it however remembered, that if it be only winged it will make a desperate resistance; and, when secured, no persuasion will bring the stubborn bird to eat, and, if forced, it will regurgitate unless it be ringed, as did the one we shot: it will therefore, in our opinion, be more prudent and more humane to destroy it immediately. If the bird be not much mangled, the circumstance of its being both rare and ornamental leads us to recommend its being preserved by some good bird stuffer; or, should the sportsman entertain a strong wish to preserve the winged bittern alive, he may do as is done in the case of herons, which are equally obstinate, and will disgorge any food forced down, unless a ring be placed around the neck sufficiently tight to prevent regurgitation, and yet not to interfere with respiration.

SUBJECT. 2. *The Heron, Crane, and Stork.*

2692. *The heron* (*Ardea major* Linn., fig. 430.) has already occupied a portion of our attention as a subject for the sport of hawking, p. 712; but as this bird is occasionally



THE HERON.

pursued by the gunner also, and is furthermore a very interesting and striking object among the *fenbirds*, he will require some additional notice here. We unite with Mr. Daniel in contradicting Buffon, who describes the heron “as exhibiting the picture of wretchedness, anxiety, and indigence, condemned to struggle perpetually with misery and want, and sickened by the restless cravings of a famished appetite:” and we equally unite with Mr. Daniel in supposing that the heron suffers no more than any other animal whose attention is employed in looking for his prey. On the contrary, we consider the hope and expectation are to this bird a source of pleasure. Thus it is that our imaginative writers are so apt to paint Nature in accordance with their own poetic notions or contracted views, without regarding the operations of Nature generally for the supplying the wants of her creatures. It is true that this bird is seen to stand for hours even transfixed as it were, and apparently as inanimate as the willow stem within a few yards of it. Nature however, to fulfil her kindest purposes, gave the bird this aptitude, by which it is made to appear as a perfect stock. Not a motion is to be observed in it, for the slightest displacement of any part of the bird would at once inform the fish of their danger. But they having surveyed and swam around and around the unmoving mass, at length regard it with equal indifference as they do the alder or willow stump. During

this apparent torpor vast numbers of the smaller fry pass and repass with safety, for this giant does not make war on pigmies. Let but a carp, roach, dace, or eel, of several ounces make its appearance, and with unerring certainty it is immediately within the serrated mandibles of the heron; while two others may probably at the same moment become inclosed, one in each foot, where they also are safely retained by the sawlike processes which garnish the centre claw of each. These manifestations of cause and effect, of wants and liberal means of supplying those wants, are strikingly apparent throughout the whole of Nature's works; but they impress us more forcibly when we regard them in the living objects which most immediately concern us. It is thus, though professing to write for the sporting world particularly, that we would likewise take this opportunity of awakening attention in the minds of many others also, by pointing out to them proofs of design in objects likely to fall, on many occasions, under the eye of the walker abroad; and although such facts may probably not now greatly interest him, either as a sportsman or as a mere taker of exercise, yet when either age or decrepitude from gout, &c. may overtake him, perhaps these notices being then considered as interesting may lead to further inquiries, and the great page of Nature that was in the plenitude of youth and health disregarded, although then widely opened before him, may now be ransacked, and his battles, we mean his huntings, his shootings, and his anglings, may be enacted over again, under new and more enlarged views than heretofore.

2693. *Herons, cranes, and storks*, present characters so much in common, that although there are above eighty distinct species, yet Linnæus classes the whole together. Some modern ornithologists, however, have separated the heron from the crane and the storks; and under the more definite views now entertained on genera and species, this is not done without propriety. The stork however, if Bewick's correct figures are referred to, will show the very close resemblance it bears to the heron. It is nevertheless now so seldom seen in Britain, as to render it not needful to be noticed in a sporting point of view. As is well known, it has been immortalised by many scriptural references and figures of speech derived from its habits. (See Jer. viii. 7.; see also Dr. Harris's *Natural History of the Bible*, art STORK.) When we were campaigning in Holland, we were extremely pleased to observe how welcome a visitant this bird was to the natives of the country. It arrives, we learned, about the beginning of April, roosting on the houses; it also makes its nest on or about each chimney. Early in the autumn, having reared its young, the whole prepare for their departure in vast congregational meetings, and loud chattering issues from the whole assemblage. Two or three of these meetings having occurred, on an appointed day the whole leave, taking a southward course to Africa, particularly to Egypt. In 1833 the following note appeared in the public journals: — "Last year a Polish gentleman having caught a stork upon his estate near Lemburg, put round its neck an iron collar with this inscription, — *Hæc ciconia ex Polonia* (this stork comes from Poland), and set it at liberty. This year the bird returned to the same spot, and was again caught by the same person. It had acquired a new collar of gold, with this inscription, — *India cum donis remittit ciconiam Polonis* (India sends back the stork to the Poles with gifts). The gentleman, after having shown the inscription to his neighbours, again set the bird at liberty." (*Atlas*, December 21. 1834.) To return, however, to the heron; it is a great gourmandiser, and Mr. Daniel therefore, under a supposition that it lives on fish only, considers that it must be capable of bearing long fasts, since fish and frogs are not to be procured during very severe frosts. We, however, have no such fears for this bird, being aware that he and the whole of his vast tribe are omnivorous; at least they are not all particular about their food; as therefore, under such circumstances, so many other animals, pinched also by want of food, must be driven abroad in search of it, they then become objects of the attack of the heron. Nor is at all unlikely, that instinct may teach him to make holes in the ice, which by attracting the fish to them as air-holes, may thus furnish him with his natural food, should the diminished energies of other animals around him fail in offering a supply; for we know full well, that it is the character of the whole tribe of these devourers not to be over nice in their appetites.

2694. *The predacity of the heron is almost proverbial*, and yet these birds congregate and live in great harmony together, which they may indeed do without breaking the family compact, as they are unlimited rangers. Of their social disposition, Mr. Pennant offers proof, when he says, they perch and build in trees like rooks; and that, at Cressi Hall, near Gosberton in Lincolnshire, he had counted above eighty nests in one tree (surely it must have been a very large one). It is also well known, that, in some bordering parts of the kingdom, they build their nests in rocky cliffs over the sea; and it may be further observed, that when a number is thus located, it is always within a few miles of some well stocked mere, river, or large pond, which can yield a supply of fish sufficient for the whole fraternity; for, as far as our own experience goes, they are not very fond of sea fishing, but will fly many miles over land in search of fresh-water fish. When we lived at Tollesbury in Essex, we found several of their nests among the reeds which girted the shore of that part of the country. Mr. Daniel, then our neighbour, likewise notices the visits of these birds

to the same spots, and particularly remarks that their nests "were made of sticks and lined with wool or feathers, in which the female lays five or six large eggs of a pale green colour. During incubation, the male passes much of his time perched by the female. They desert their nests during winter, except in February, when they resort to and repair them. The young may be easily tamed; but when old birds are captured they will refuse nourishment, and shortly pine away." (P. 403.) He also states a circumstance which we know to be true, that he kept three or four of the young ones he took from these nests, and from what he saw of their voraciousness, the account in the *Gentleman's Recreation* of a tame one eating fifty small roach and dace, one day with another, he can believe is not exaggerated. In their fishings (which we have watched with much interest in Ireland, particularly in one instance, where a tame young one was kept in a gentleman's grounds and from which he seldom strayed, as the well stored ponds afforded him an ample supply of food), as a fish moved near, the heron instantly struck him, and usually crosswise. With this bird the fish was not always thrown up into the air, as Mr. Daniel says was done with the herons he kept. It is true that sometimes the bird we allude to did throw his fish above him, but he more often elevated his head aloft in the air, and then opening his mandibles he adjusted his prey so as to bring its head downwards, which done, he instantly swallowed it. As, however, a disposition to throw the fish above the head had been manifested, it is probable that the youth of the heron we saw prevented its having adopted the entire action of throwing it aloft and then catching it.

2695. *On the shooting of the heron* we have little to offer, although we have shot them on the Essex and Sussex coasts, and have attempted it in Ireland, and in Wales, but less successfully, for the bird itself is there more wary, because more followed. The wildfowl gunner with his long tube has a better chance, for he can pull him down at a considerable distance; but the moll, as he is called, will seldom wait for any one to take other than a hopeless shot at him, who has only a moderate piece and moderate charge to present at him. We have however, five or six times in our life, been too many for this keen eyed bird; and should you, brother sportsman, have the same luck, and it be your first shot, let us caution you to be wary how you approach your prey; for he will resist much if not mortally wounded, and die very hard. Neither, without great care on your part, will he go unrevengeed by striking you with his bill, which being long, extremely sharp, and wielded with extraordinary force, will penetrate even the stout fen boot, or perhaps your body may receive the blow. Watch, therefore, your opportunity to put your foot on his neck, and then do what you will with him afterwards. We cannot, however, avoid giving one more caution: call your dog to you, and by no means let it approach the wounded bird, whose bill has penetrated, not only the eye, but has also entered the brain of a dog attempting to seize him.

SUBJECT. 3. *Ruff and Reeve.*

2696. *The ruff* (*Tringa pugnax* Linn., fig. 431.) will first engage our attention, as he has qualities and personal advantages his mate does not possess. The length of the ruff

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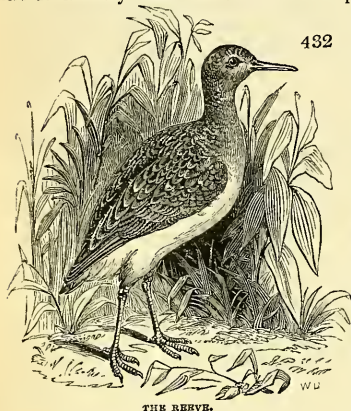


THE RUFF.

is about twelve inches, his weight ranges between six and eight ounces. The bill, which is reddish at the base, is about an inch and a quarter long, and is tipped with black. The distinctive sexual mark from whence he derives the name of ruff, differs in almost every one in its colouring, though less in its dimensions and method of carriage. It is, however, not perfect until the second year of his age, when it becomes a vast feathered mass, which the animal at pleasure elevates and swells out by a muscular apparatus operating on the skin of the neck, which Mr. Daniel aptly likens to the ruff of our ancestors: a portion of these feathers stands up over each eye imitating ears; and this singular bunch of feathers grows from the back of the neck, spreading wide on both sides; this tuft, and the feathers of the ruff, are frequently of different colours in the same bird: the ruff is of as many and various dyes as there are birds that wear it. Latham observes, "that of whatever hue the ruff may be, the breast differs very little, and the transverse markings on the upper parts of the plumage somewhat correspond, the ground tint being mostly brown." The tuft in the males is not a warlike ornament only, but is a sort of defensive armour, which wards off the blows, by the length, stiffness, and closeness of the feathers; they bristle in a threatening manner when the bird makes an attack, and their colours form the chief distinction between the

individuals. In some the feathers are rufous; in others grey; some white; some of a fine violet black, broken with rufous spots: the white is most rare. In its form, too, the tuft is as variable as in the colours, during the whole time of its growth. This beautiful ornament drops when these birds moult about the end of June, as if Nature reserved her decorations and armour for the season of love and war. After the time of incubation, the long feathers fall off, the caruncles shrink in under the skin, so as not to be discerned, and their place is occupied by feathers; the males are no longer by their plumage to be distinguished, and both sexes abandon the places where they breed. The feathers that bear an uniformity of colouring in the ruff are the coverts of the wings, which are brown inclining to ash colour; the feathers on the breast, which are often black or dusky; the four exterior feathers of the tail, which are of a cinereous brown; and the four middle ones, which are barred with black and brown: the quills are dusky; the lower belly, vent, and upper tail-coverts white." (*Rural Sports*, vol. iii. p. 215.)

2697. *The reeve* (fig. 432.), is smaller than the ruff, and is not in the least pugnacious: she is entirely destitute of the collar plumage: she is also brown in her upper parts; the middle of each feather is dusky, the greater quills are the same; the secondaries rufous brown, and her legs incline to be yellow. She lays four eggs in the grass, which are white as their ground colour, and marked with iron coloured spots. The fowlers, it is said, avoid taking the reeves for two reasons: first, because they are smaller, and secondly, by sparing them, they hope to encourage the breed. The arrival of the reeves is the signal for the ruffs to begin to *hill*; that is, to choose a ground for love scenes—and it is usually some elevated spot. Each ruff is said to possess himself of a small mound, or part of this hill, which he wears quite bare by *hilling*, as it is called, or wearing it away with his feet. Mr. Daniel says, "When a reeve alights, the ruffs immediately fall to fighting; they use the same action in fighting as a game-cock, place their bills to the ground, and spread their ruffs."



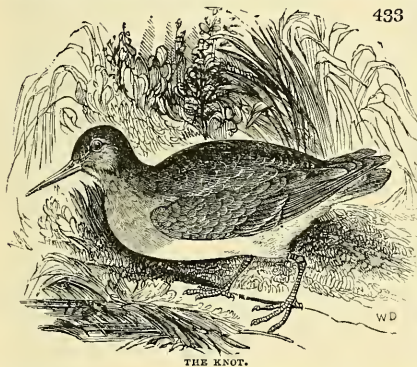
When a fowler discovers one of these *hills*, he places his net over-night, which is of the same kind as those called *clap*, or day-nets, only it is generally single, and is about fourteen yards long and four broad: at daybreak he resorts to his stand, at the distance of one, two, three, or four hundred yards from the nets—the later the season the shyer the birds, and he must keep the further off; he then makes his pull, taking such birds as are within reach; after that he places his stuffed birds, or *stales*, to entice those that are continually traversing the fen. A fowler has been known to catch forty-four birds at the first haul, and the whole taken in that morning were six dozen. When the stales are set, seldom more than two or three are taken at a time. An experienced fowler will take forty or fifty dozen in a season; they are fattened for the table with bread and milk, hempseed, and sometimes boiled wheat; but if expedition is required, sugar is added, which in a fortnight makes them a lump of fat; they then sell for half a crown a piece. Great nicety is requisite to kill them at the highest pitch of fatness; if that is passed over, the birds are apt to fall away. The method of killing them is by cutting off the head with a pair of scissors; the quantity of blood that issues is very great, considering the size of the bird: like the woodcock, they are dressed with their intestines; and, when killed at the critical time, epicures declare them to be the most delicious of all morsels." (*Rural Sports*, vol. iii. p. 218.)

2698. *Ruffs and reeves* must not be considered as being spread throughout England generally. They are principally confined to the Fens of Lincolnshire, Cambridgeshire, the Isle of Ely, and to the East Riding of Yorkshire, all which are among their principal resorts. Occasionally, however, a slight sprinkling is met with in other moist localities; thus, before the fens around Bridgewater in Somerset were drained, they were to be seen there also. They are, however, becoming every season more and more scarce, owing in some degree to the havock made among them, but much more to the draining of the fenny districts. Colonel Montague says, that a few likewise may yet be met with about Crowland; we however believe, that the fens between Boston and Spilsby are the localities more likely to produce them at the present day. The sporting history of these birds was formerly a very interesting subject, and collected together numbers of gentry; some to watch their habits, some to shoot them, more to see them netted, and many more to eat them. For some time past we believe that 2 guineas per dozen has been demanded for them, when they have been put up by celebrated breeders, and have fattened properly. The shooting of them is dull sport, and therefore not now much practised; they flush badly, and the

veriest tyro can hardly fail to hit them. Indeed, during the amorous season, no credit is to be got by disturbing them. But nevertheless they have once cut a conspicuous figure in sporting as well as gastronomic history; and the shot who could bring to bag a dozen was somewhat envied; though even then the breeder who could fatten them to monstrosity was much more so. Ruffs and reeves used to be frequently shot in Sutherlandshire, in November, by the sea side, in muddy creeks, whilst in search of food. At this season of the year what is called the "ruff" forms a part of their plumage. Ruffs and reeves have similar plumage.

2699. *The dotterel* (*Charadrius* Linn.), is the foolish fenbird (if we could believe all that has been said), which is taken by means of an unhappy propensity not unknown even by its betters, that of mimicking the spectator, be his attitude what it might, and thus he remained until the net of the fowler was thrown over him. Either this account was fabulous, or the bird became wiser; the former the most likely, for Willoughby states, to follow this sport, "six or seven persons go in company; when they have found the birds, they set their net in an advantageous place, and each of them holding a stone in either hand, they get behind the birds, and striking the stones often one against another, rouse them from their natural sluggishness, and by degrees drive them into the net. At present sportsmen watch the arrival of the dotterel, and shoot them, the decoying them by artifice, and driving them into the net, having been long disused." These birds are to be found in Cambridgeshire, Lincolnshire, and Derbyshire; we also saw them on the high moors of South Wales, but were told they are not common there.

2700. *The knot* (*Tringa Canutus* Linn., fig. 433.), is another fenbird, which, although not a very important subject to the sportsman, is nevertheless, as being somewhat connected



THE KNOT.

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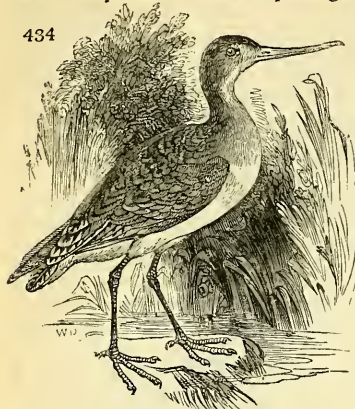
with royalty, deserving of our notice. History informs us, that Canute, an olden king of England, was so fond of eating them, that the bird itself became known by the name of knute, or knout, as this king's name was expressed by his subjects, and that gradually it was shortened to knot, as regarded the bird itself. It weighs four ounces and a half, measures about nine inches, has a bill of a dusky brown colour, of rather more than an inch in length. The head, neck, back, and wings are ashen coloured, the tail-coverts white and dusky intermixed; the neck and breast streaked with brown, and their wings variegated. It is, in fact, a species of the sandpiper, and, like that tribe, inhabits the fens. It breeds with us, and one who has a sufficient knowledge of the

fenbirds, informs us it comes over with the ruffs. It has the property of the fenbirds, of being more easily taken with nets than shot; for, if pursued, it runs rapidly through the reeds. When frozen out of the fens the birds betake themselves to the sea-shore, where they are much more approachable than most other shore birds, and are sometimes to be got in great numbers, when they will be found little if at all inferior to the ruff and his mate. The knot is said to be found in various parts of Europe; it has been met with also in Asia and America. Its eggs are pale ferruginous, marked with spots and streaks of rust colour and cine-reous; in size rather inferior to those of the lapwings.

2701. *The redshank, or pool snipe* (*Scolopax Calidris* Linn.), is also a true fenbird, where it is, or at least was, some years ago moderately plentiful. It weighs about five ounces, and is barely twelve inches long; its bill is nearly two inches in length, and has a dusky point and a red base; its head and the hind part of its neck is an ashy brown, with dusky streaks; wing-coverts ash colour mixed with brown. In action this bird resembles the lapwing, in flying round and round its nest, or round the spectator, who it supposes is approaching too near. Colonel Montague says of it, "It is not an uncommon bird upon many of our shores in winter; many breed in our marshes, on the verge of large pools, and in extensive swampy places. It lays four eggs, of an olivaceous brown, spotted and blotched with black, most numerous at the larger end; in shape and appearance much like those of the lapwing, but rather smaller. We have seen these birds on Romney Marsh in the breeding season." (*Ornithological Dictionary*, p. 412.) This author also considers the red legged sandpiper to be a variety of this species. In summer shooting this bird has afforded us much amusement, by his circuitous flights around us, on the heaths and moors frequented by them in the breeding season. These gyrations seldom fail to afford the sportsman a fair shot, and we really do not know a more instructive practice. Nor are the birds themselves, when dressed, badly flavoured. They are very plentiful in Holland, as we can assert from our own experience.

2702. *The godwit (Scolopax Ægocepalus Linn., fig. 434.)*, is a fowl bird, but is subject to much variety both in size and plumage, which has given occasion to some authors erroneously to consider each of these varieties as a distinct species. It weighs from seven to ten ounces, and measures in length fifteen or sixteen inches.

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THE GODWIT.

The bill, which is little reflected, is of a pale brown, and dusky at the point; the head, neck, and upper parts are of a light rusty brown, the breast ashy brown also; the belly and tail feathers are white. There is likewise a red godwit noticed by Colonel Montague, which he says is larger than this, weighing twelve ounces, and measuring about eighteen inches. The godwit was known formerly as a permanent resident with us, resorting to the fens from the moors, where they are taken by means of a stale, or stuffed bird, after the manner of the ruff and reeves. Towards the winter the godwit may be seen at the mouths of many of our large rivers, and, as we understand, it was then a very popular object of pursuit to winter fowl shooters. For ourselves we do not remember to have met with this bird; at least, if we did, we did not recognise it as the godwit, although its size, being fully equal to

that of a woodcock, would render it an object of notice. At Hudson's Bay it packs, and in such numbers that Mr. Atkinson, a resident there, is said to have killed seventy-two at one shot. There is still another variety of the red godwit besides that above mentioned, "the greater covert of the wings so deeply margined with light greyish brown, as to appear almost all white at a distance, and the sides of the body had a few long streaks of brown." Bewick says, "The godwit is met with in various parts of Europe, Asia, and America: in Great Britain, in the spring and summer, it resides in the fens and marshes, where it rears its young, and feeds upon small worms and insects. During these seasons it removes only from one marsh to another; but when the winter sets in with severity, it seeks the salt marshes and sea-shores. The godwit is much esteemed by epicures as a great delicacy, and sells at a high price." (*British Birds*, p. 60.)

SUBJECT. 4. *Plovers and their Varieties.*

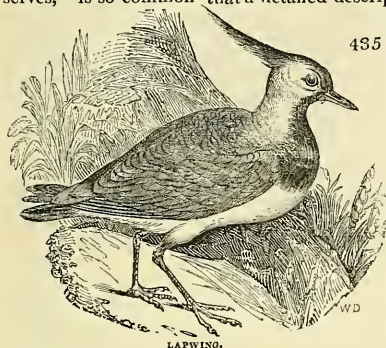
2703. *Bewick very justly considers the plovers more as land than water birds*; at least it would appear that they connect these two vast families. Although they frequent the sea-coasts, and are seen occasionally in moist places, yet during the whole of the summer months they inhabit mountainous districts, and breed in lofty situations. Consequently, as Bewick aptly remarks, "they are no more water birds than many of our small birds which repair thither for the same purpose."

2704. *The great plover (Charadrius Ædicnemus Linn.)*. This bird, also called stone curlew and Norfolk plover, does not, according to some naturalists, belong to the plovers, but is rather a diminutive type of the bustard, and he certainly bears many bustard characters about him, and we are sure that every sportsman would regard him the more for such resemblance; and, as we write for such, we likewise have no objection so to consider him. He is about sixteen inches long, bill of a moderate length, eyes and eyelids pale yellow, both above and below, which pale streak forms a very characteristic mark. Upper parts of the body a tawny brown, each feather presenting a dark streak down its centre; the belly, thighs, and vent, are of a pale yellowish white; the legs are yellow, and naked above the knees, which are knobbed, as though swollen, and hence it is that one of his common names of thick knee'd bustard is derived. He is frequently found in Norfolk, and, as it is said, in several of the southern counties, but is not seen in the north. Mr. White notices this bird as frequenting the districts of Selborne, in Hampshire. The female makes no nest, but lays its eggs on the bare ground; and the chicks, almost as soon as hatched, are seen running about nimbly.

2705. *Of its value to the sportsman* we can say little but that it is a great tantaliser; so much so, that we have turned our back on one, as knowing we should be only duped into the loss of our time, our temper, and our shot, were we to pursue it, as Bewick must have done, or he could not have penned such a true picture as that which follows:—"Although this bird has great power of wing, and flies with great strength, it is seldom seen during the day, except surprised, when it springs to some distance, and generally escapes before the sportsman comes within gunshot; it likewise runs on the ground almost as swift as a dog; after running some time, it stops short, holding its head and body still, and on the least noise squats close on the ground. In the evening it comes out in quest of food, and may

then be heard at a great distance; its cry is singular, resembling a hoarse kind of whistle three or four times repeated, and has been compared to the turning of a rusty handle. Buffon endeavours to express it by the words *turr lui, turr lui*, and says it resembles the sound of a third flute dwelling on three or four tones from a flat to a sharp. Its food consists chiefly of worms. It is said to be good eating when young; the flesh of the old ones is hard, black, and dry." (*British Land Birds*, p. 322.)

2706. *The lapwing, or pewit* (*Fringilla Vanellus* Linn., fig. 435.), as Mr. Daniel justly observes, "is so common that a detailed description is unnecessary. It is about the size of a



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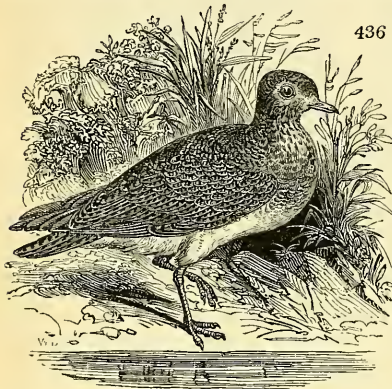
pigeon, and weighs eight ounces; the plumage is beautiful, especially the crest; the male and female are alike, but the last rather smaller; is a constant inhabitant of this country, and seen on most of the heaths or marshy grounds; but, as it subsists chiefly on worms, it is forced to change its place in search of food, and is frequently seen in great numbers by the sea-shores, where it finds an abundant supply of *Molusca*. It is everywhere well known by its loud and incessant cries whilst on the wing, and whence, in most languages, a name has been given to it as imitative of the sound. The pewit is an active bird, almost continually in motion; it runs along the ground very nimbly, and bounds from spot to spot with great agility; it frolics

in the air in all directions, assuming a variety of attitudes, remaining long upon the wing, and sometimes rising to a considerable height." (*Rural Sports*, vol. iii. p. 227.) The hen bird lays four eggs of a dirty olive spotted with black, which she deposits in a small indentation of the ground, having scraped together a little dry grass or heather to keep them from chilling. The young birds run nimbly very soon after they are hatched, and it is then that the assiduity of the parent bird is most conspicuous. Almost as soon as a stranger appears, at even a quarter of a mile distant, they begin to evince a sense of alarm by rising in the air, making circumvolutions towards the stranger to attract his attention. Should his steps be bent towards the spot where the young are crouched, it is most probable that both parents will alight on the ground and run before him, sometimes, like the partridge, feigning lameness. Taking advantage of these artifices, we have very many times sought around and around for these young, but we do not remember to have succeeded more than twice. Once it happened to us to do so in the Isle of Wight, on the high ground between Newport and Cowes. Here the accident of one of the young brood just shifting its position striking our eye, brought the object before us, and with much quickness we put our hat over it, and next our hand. It was moderately covered with fleecy matter, and exhibited the germ of feathers starting out, and appeared to us four or five days old. The dartings of the parents at this time were rapid, and in full accordance with their excitement. They came so near, that had we been so inclined, our walking-stick might have been successfully employed in taking one or both. We, however, meditated a more pleasing exhibition by setting the little captive at liberty, nor can any language describe the apparent joy of the old birds as the little chick, with almost race-horse speed, tripped away, the darting parents closely pursuing it. About the latter end of July, as Buffon has justly observed, the lapwings have their gatherings, both old and young. They hover in the air. It may be fancy, but it would appear to us that they were drilling their young in the evolutions of that varied and rapid flight, which was to carry them from place to place to meet their change of locality, of food, and of temperature. At one time they search the dry heather of the downs for insects and grubs; a few hours hence they are marching over the moist meadows in pursuit of shell-fish, &c. This diversity of food makes their own flesh of an excellent flavour, and therefore towards the autumn they are exceedingly good eating. We need not tell the lover of delicacies of this kind, how good their eggs are, and how ready a sale they find in any market: neither do we suppose, that we shall fail to excite the further sympathy of the reader towards this beautiful bird, by the mention of his domestic and social habits, of which so many notices are extant. One has been known to cry his pewit at the kitchen door, because the garden air was getting too cool for him; on its being opened he entered, and immediately making his way to the kitchen fire has nestled himself between the cat and dog lying on the hearth.

2707. *Shooting the pewit.* Really, brother sportsman, after all we have said to interest you in favour of these birds, we can, with a very ill grace, advance any hints on the subject of their destruction. But we are, one and all, a medley of contradictions. We follow impulses, often very contradictory ones, and shelter ourselves under the command given us

from above, "Take, kill, and eat." As a summer shooting we hardly know a more lively, or amusing one than pulling down the plover. Like most other shooting at birds on the wing, it requires both tact and habit. A dog assists your success, particularly, it is said, in the breeding season; but we have found nearly at all times, that when a dog is present, these birds will fly round and round it, making occasional swoops threatening an attack, at which times a quick gunner may have excellent sport. It is a good bird to eat, as we well knew before a Frenchman told us, *Qui n'a pas mangé de vanneau ne sait pas ce que gibier vaut*. On the wing, we may add, their rapid dartings are such as to keep them secure from the gun of the uninitiated; but there is a pause when they either rise, or otherwise proceed in a direct line. It is at one of these moments the professed plover shooter usually succeeds in his shot. Others do it best, as with their gun they follow their lofty gyrations; and we have more than once succeeded by throwing up a small feathered ball among them, which, attracting their notice, produced a general halt, and offered a favourable opportunity of taking two birds at one shot, or making a second shot with the other barrel. We always made use of No. 4. when engaged in this shooting.

2708. *The golden plover* (*Charadrius Pluvialis* Linn., fig. 436.) Colonel Montague thus describes this bird:—"Weight between seven and eight ounces; length ten inches and a

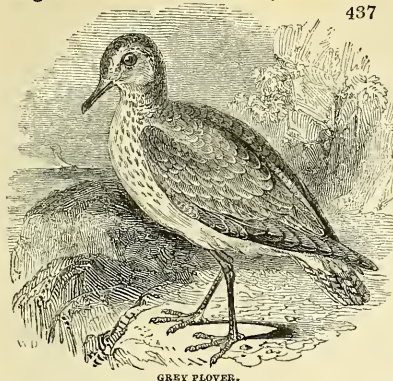


GOLDEN PLOVER.

half; bill one inch, dusky; irides hazel. The general plumage above is dusky, spotted with greenish yellow, brighter on the back and scapulars, palest on the wing-coverts; sides of the head and neck, and sides of the body, lighter; middle of the belly and vent white; quills dusky, slightly margined at the tips with grey; tail dusky, spotted with yellow and dull white, somewhat in form of bars; legs black." (*Ornithological Dictionary*, p. 213.) This gentleman would lead one to consider this bird and the next, known as the grey or whistling plover, as one and the same. Possibly, however, M. Bailou's account may throw some light on the matter:—"I have," he says, "observed these birds in Piccardy, and assert that their early plumage is grey; that at their first moult, in August and September, they get some feathers of a yellow cast, or which are

spotted with that colour; but it is not until after some years that they acquire their fine golden tint." He adds, that the females are hatched entirely grey, and only when old assume a little yellow; and that it is very rare to see their feathers so uniform and beautiful as the males. No longer need the distinction of tints in this species of birds be remarked, since this gentleman has proved, that the varieties result from the difference of age and of sex. "It is," says Colonel Montague, "a common bird, found in most parts of the known world. With us it chiefly inhabits open ground, such as heaths, moors, and downs, and in severe weather the sea-coast; but it repairs to the more uncultivated waste of the northern mountains to breed." "We have," he continues, "seen them in various parts of Scotland on swampy ground, upon the higher hills, and even on the lower lands, covered with heath, amongst which they lay their eggs, four in number, about the size and shape of that of the lapwing: colour, cinereous olive, blotched with dusky. The young run as soon as they are excluded from the egg, and follow the old ones to the moist places in search of worms. At first they are covered with down of a dusky colour, and are incapable of flying for a considerable time. The parent birds are very tenacious of their young, become very bold at this time, will light just before a dog, and run on the ground to entice him from their nest." (P. 213.) Mr. Daniel tells us, "This elegant bird inhabits England the whole year, and breeds on several of our unfrequented mountains; is very common on those of the Isle of Rum, and others of the loftier Hebrides; also on the Grampian, and all the heathy hills of the islands and Highlands of Scotland. Millions are found in the Orkneys, from which they never entirely migrate: they make a whistling noise, and fly in small flocks, and by a skilful imitation of the note, may be enticed within shot. They frequent, in November, meadows and commons; and there was once an instance of a warrener near Bristol killing eleven at one shot. Their flesh is sweet and tender, they are dressed like the woodcock, with their trail, and are excellent eating." (P. 224.) Of the shooting of these birds we have only sufficient experience to state, that they dart and fly about the dog and gunner like the pewit; but, altogether, they are a much wilder bird, and therefore lay themselves less open to the gunner's wiles. Colonel Hawker states, that it was formerly taken with the stalking horse; and we think that it was likely to be much followed, and in various ways, as it is esteemed a delicacy.

2709. *The grey plover* (*Tringa Squatarola* Linn., fig. 437.). Authors differ about the designation of this bird, both systematic and popular. It is a lapwing with some, and a true sandpiper with others. All however agree, that it is about twelve inches long, and twenty-five broad; weight, seven ounces.



GREY PLOVER.

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“In the roof of its mouth,” says Mr. Daniel, “is a double row of spinous appendages, pointing inwards; the head, back, and wing-coverts, are of a dusky brown, edged with greenish ash colour, and some with white; the cheeks and throat white, marked with oblong dusky spots; the belly, thighs, and rump, white; the exterior webs of the quill feathers black; the lower part of the interior webs of the first four white; the tail, which is short, does not project beyond the wing, and is marked with transverse bars of black and white; the legs are of a dirty green; the back toe extremely small. This bird is not found in any great abundance in England; they generally come in small flocks about

October, and leave about March. In cold and frosty weather they seek their food on such lands as lie near and adjoining to the sea; in open weather they feed in ploughed fields, especially if sowed; and, having fed, fly to some splash of water to wash their beaks and feet, a habit which is also common to the woodcocks, the lapwings, the curlews, and many other birds which feed on worms: they sleep chiefly in the day in calm weather, passing most of the night in running up and down after the worms which then creep out of the ground. At that time they always make a small cry, as if to keep their flock collected till day-break, when they unite and fly to the coast. They are sometimes taken in nets at their first coming, and the fowler is cautious to set his nets to play with the wind; for instance, when the wind is easterly, that they may play westerly. The north-west is the worst wind to take them; all seaward fly against the wind whenever they design to rest on the land. The preferable places for setting the nets are in large common fields of green corn, and near to water, for there they are sure to resort to clean their beaks and feet: their flesh is very delicate. In Carolina they are seen in the valleys near the mountains, in great numbers, but seldom alight. They are, as we are told, very common in Siberia, appearing there in autumn in vast flocks coming from the extreme north, where they breed.” (*Rural Sports*, vol. iii. p. 225.) This bird seems to be by no means plentiful in England. Mr. Gilpin has, however, noticed them (many years ago) as occasionally abounding in the New Forest. He says he has sometimes seen large flocks of the grey species, and admired them as they encircled the air. In their regular flight they, in some degree, resemble waterfowl, but are not so determined in their course, wheeling about and performing various evolutions; at times they appear scattered and in confusion, until closing together, as if by some word of command, they get again into form. It may be proper to notice that this bird is much more of a coast than either fen or water bird. Grey plover are very numerous in Ireland, to which they appear at a certain time of the year to migrate in countless multitudes. We have ourselves seen them alight in separate flights of two or three hundred, and immediately commence running about in pursuit of worms, &c. Our practice was not to fire at them on the ground, but we usually waited for their own voluntary rising to shift their quarters. In this movement they usually commenced by rising to a considerable height in the air; they next descended, and made numerous gyrations, preparatory to their flight to a distance. It is during these whistlings that the watchful gunner may succeed in bringing several to bag.

2710. *The wheatear* (*Motacilla Enanthe* Linn.). We would not affront the sporting reader with this small bird, did it not revive in our memories many pleasurable rides and walks we have had on the Brighton Downs, when we ransacked the numerous turf-traps made by the shepherds, prepared with our pence to deposit in the room of the bird we took away. “The wheatear,” says Colonel Montague, “is a migrative species, appearing with us the latter end of March; some few, probably, remain the whole year, as we have now and then seen it in the month of February. It principally frequents rabbit warrens, or such parts as are inclosed with stone walls; makes its nest in a deserted rabbit burrow, or in an old stone quarry; sometimes in a heap of stones, or the hole in a wall; but most times on the ground. It is composed of moss and dried stalks, and fibres put together with wool, and lined also with hair and wool. The eggs are five or six in number, of a uniform pale blue colour, weighing about forty-three grains. The numbers that breed in this country must be very considerable, but they are so dispersed that few are seen at that season in the same situation. In September they begin to retire, and seem to assemble from all parts to the Sussex and Dorset Downs, contiguous to the coast, preparatory to

their departure. The quantity taken annually about Eastbourn is prodigious; Mr. Pennant says 1840 dozen. These are caught in a singular manner, by placing two turfs on edge, at each end of which a small horse-hair noose is fixed to a stick, which the bird, either in search of food, or to evade a storm of rain, attempts to get under and is caught. Upon inquiry of the shepherds whose trade this is, we have been informed that fifty or sixty of these traps have had a bird in them of a morning, sometimes several mornings together, and then for a day or two scarcely one is to be seen; and yet they are never observed to come in flocks: it is the general opinion that they come in the night." Contrary to the usual custom of birds who sing most freely when not in captivity, the same authority says, "In confinement they are almost continually in song, and sing by night as well as day: they have a very pleasant, variable, and agreeable song, different from all other birds; sometimes it is very loud, and they continue it a great length of time, not continually breaking off like a robin redbreast, and some other birds; but their winter song is best and most varied. A pair that I possess at present were caught in September last, and they began to sing in a few days, and have continued in song ever since; and now, while writing this, the 22d day of December, they are in full song. When in a large cage, or aviary, where there is plenty of room, it is very amusing to see them at play, flying up and down, and spreading open their large wings in a curious manner, dancing and singing at the same time." (*Ornithological Dictionary*, p. 532.) Shooting these birds is not uncommon among Brighton visitors, but we do not envy either their sport or their spirit. Though our limits will hardly permit, our wish to offer to the reader's notice the beautiful lines of Mrs. Charlotte Smith addressed to this bird, as introduced in her *Conversations*, overpowers our reluctance, and forces us to offer so many of them as more particularly allude to the well known process of ensnaring this bird:—

"From that deep sheltered solitude
Where, in some quarry, wild and rude,
Your feathered mother reared her brood,
Why, pilgrim, did you brave
The upland winds, so bleak and keen,
To seek those hills, whose slopes between,
Wide stretched in grey expanse is seen
The ocean's toiling wave?"

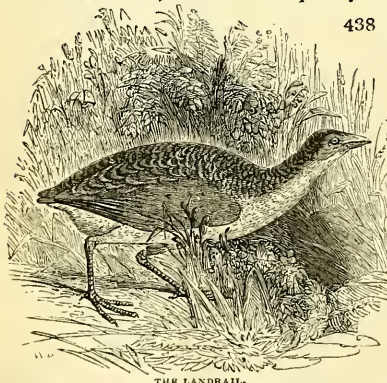
"Alas! and has not *instinct* said,
That *Luxury's* toils for you are laid,
And that, by groundless fears betrayed,
You ne'er perhaps may know
Those regions where the embowering vine
Loves round the luscious fig to twine,
And mild the suns of winter shine,
And flowers perennial blow?"

"To take you shepherds' boys prepare
The hollow turf, the noose of hair:
Of those weak terrors well aware,
That did you vainly dread
The shadows floating o'er the downs,
Or murmuring gale that round the stones
Of some old beacon as it moans,
Scarce moves the thistle's head;"

"And if a cloud obscures the sun,
With faint and fluttering heart you run,
And to the pitfall you should shun
Resort in trembling haste;
While on that dewy cloud so high
The lark (sweet minstrel of the sky)
Sings in 'the morning's beamy eye,
And bathes his spotted breast."

SUBJECT. 5. *The Landrail, or Corncrake.*

2711. *The landrail, or corncrake* (*Rallus Crex* Linn., fig. 438.), must not be confounded with the waterrail, as is not unfrequently the case; but this latter has a much longer bill, and its plumage, when compared with the



THE LANDRAIL.

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landrail, will be seen to be very different. Its habitation also is not the same, for whereas the landrail seeks thick but dry grass fields, the waterrail is found in low sedgy slops, nor do we ever remember to have found one in any other situation. Bewick's description of the landrail makes its length to be "rather more than nine inches; body compressed; bill light brown; eyes hazel; all the feathers on the upper parts of the plumage dark brown, edged with pale rust; both wing-coverts and quills deep chesnut; fore part of the neck and breast pale ash; a streak of the same colour extends over each eye, from the bill to the side of the neck; belly yellowish white; sides, thighs, and vent, marked with faint rusty coloured bars; legs pale flesh red," (*British Water Birds*, p. 130.) The

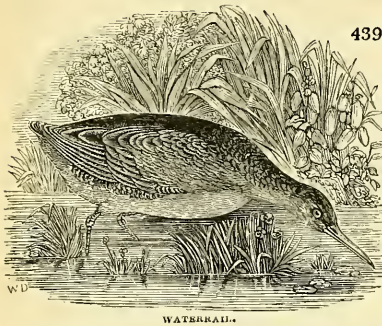
landrail and quail arriving so nearly together, has made the former to be called among country people the king of the quails. Those who are accustomed to its cry can never mistake it; and it is best expressed by a quick sibilant of *crek, crek, crek*; or, as Mr. Daniel has it, "like a noise made by striking forcibly the teeth of a large comb under the fingers." If the sound be pursued, it is almost instantaneously heard fifty paces off, so rapid are the motions of this bird, the framing of whose lower limbs by the length of the leg, shank, and toe bones, are such as to enable him to make a monstrous stride at each extension of the limb, and also to repeat the action of each step in such rapid succession,

that he can commonly elude the pursuit both of the sportsman and his dog. The landrail, according to Mr. Pennant, lays from twelve to twenty eggs, of a dull white. Buffon on the contrary, and Latham likewise, a more correct authority, say the number seldom exceeds twelve, and that they are rather larger than those of the quail, and in colour not unlike those of the missel thrush. The nest itself is usually negligently formed of dry grass, and perhaps a few soft dry leaves, with a little moss intermixed, and the whole bedded in some accidental excavation in the ground; but in some cases which have fallen under our notice, it was in the highest and thickest grass patches. As soon as the young escape from the shell, their limbs, formed on the model of the parent, enable them to follow and keep up with her. We are disposed to think they breed more than once in each season, and other sportsmen have observed the same to us. One instance in our own shooting practice assures us of this, for having dropped a leg of one by a single shot, which we knew to have been lately hatched, we, in a few weeks afterwards, flushed the lame bird again, when we had sufficient proof, both by her manner and by our dog having picked up one of the second brood quite callow, that she had bred a second time. It is rather a matter of curiosity to see how very eagerly a pointer, or spaniel, follows the scent of the landrail, and how common it is for his eagerness to carry him beyond the spot, when he stops, looks bewildered, and once more he hunts and rehunts his ground over, but with no better success. The rail had squatted, the dog had overshot her, which she taking advantage of, took another run, and having reached within a few yards of the termination of the inclosure, she springs up, flies heavily, and either settles on the hedge, or just on the other side, from whence she commences her renewed pace, and on her next stoppage her *crek, crek*, is again heard, and her brood, with their black downy covering, hurry onwards, with a speed not greatly inferior to that of the mother, to join her. "Cornerakes," says Mr. Daniel in his *Rural Sports*, "are plentiful in some parts of these realms; in Ireland particularly so, where it is probable they pass the winter. They are in the greatest plenty in the Isle of Anglesea, where they appear about the third week in April, supposed to come there from Ireland; at their first arrival it is common to shoot seven or eight in a morning. They abound in the county of Caithness in Scotland, and are found in most of the Hebrides and the Orkneys. Few places in England are destitute of them in summer; but they are nowhere what may be called common. It is observed, wherever quails are in plenty, the crake abounds. On their first appearance in England, they are so lean as to weigh less than six ounces, but, before their departure, have been known to exceed eight; and are so fat, that this same author asserts he has been frequently obliged to wrap his handkerchief round them, to prevent the fat, which exuded from the shotholes like oil, from soiling other birds: their flesh is reckoned an exquisite morsel." (Vol. iii. p. 187.)

2712. *Shooting the landrail.* Talk of sport! we think that we ourselves have been, and should be yet as fond of shooting as any man living, were we not obliged to stay at home all day, ay, and trim the midnight lamp also, to complete the work before us. Yet, with all this attachment to the dog and gun, we do not now think that the tantalising *crek*, from the finest and largest expanse of meadow that was ever beheld, could tempt us to commit ourselves by entering it. No, no! we have seen our staunchest pointer *dumb-founded* in the pursuit; and although not a little anxious to reward both the dog and ourselves by dropping this vagrant, who, unseen, has at one moment called to us most lustily in the middle of a field, which we and our dogs were hunting carefully, and the next, or as the Irishman would say, in no time or less, was heard *crek, creaking*, far away in the next. We will, therefore, have no more of him; but should you, brother sportsman, be tempted to go out purposely for landrail shooting, take two steady spaniels that will range close yet thoroughly, in preference to a pointer, whom it is vexing to see cautiously pursuing the fleeting scent and tracking steps more nimble than his own even. We cannot close our account without noticing the following curious fact, mentioned in the *Library of Entertaining Knowledge*, on the FACULTY OF BIRDS, — that a young cornerake, kept by a Mr. Jervis, showed so extreme an attachment to water, that when it was placed before it, it would swim, dive to the bottom, and play about in it with the greatest apparent satisfaction, and with as much activity as if it had never been used to any other element. This bird is said to lay twelve or fourteen eggs, a little less than those of the partridge, but longer: their colour is that of a muddy white. Where they migrate to, does not seem to be precisely known, but it is supposed they go southward, probably into Africa. In our former remarks on the migration of birds, if we mistake not, we noticed that of the landrail and quail. Pennant finds no difficulty in accounting for the motive of migrations: a defect of food at certain seasons, or the want of a secure asylum from the persecutions of man during the time of courtship, incubation, and nutrition. He considers that "most of the birds which leave us in spring to spend the summer elsewhere have been traced to Lapland, a country of lakes, rivers, swamps, and Alps covered with thick and gloomy forests that afford shelter during summer to the fowls, which in winter disperse over the greater part of Europe. In these arctic regions, in consequence of the thickness of the woods, the ground remains soft and penetrable to the woodcocks, and other slender billed fowl." (P. 278.)

SUBJECT. 6. *The Waterrail.*

2713. *The waterrail (Rallus Aquaticus Linn.).* This bird and the last are sometimes confounded with each other, but our figure (439.), we think, will sufficiently indicate that they



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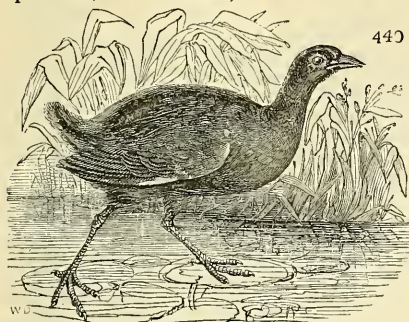
are as distinct birds in external appearance as they are in their habits and localisation. No sportsman, we presume, would fall into such an error as this, which would present him one day a bird quite at home in the high grass of an upland district, and the next day to be found only in a low watery locality, where rivulets, marshes, and ponds abound, or in the sedges and reeds, in which only the water rail delights to dwell. The water rail is not altogether so invisible as the land rail; he may be seen if close hunted, and though sufficiently disposed to hide himself, and almost as unwilling to get up as his namesake, yet, with a good water spaniel, may be quested to his destruction. We once hunted a water rail in

a marshy situation, he took a flight some twenty or thirty yards, and dropped among the sedge at the edge of a piece of still water. Our eyes at that time were good, and we being then very much engaged in this wild shooting, it was difficult for a bird not totally invisible to escape them. Our dog was ahead, feathering actively near where we marked him down. We advanced cautiously, expecting that he would be flushed immediately. Our dog looked us attentively in the face, and next as attentively to the bank on which we marked the bird, and as we never lost sight of the spot he dropped on, and the keen nosed spaniel indicated the same, we examined every part around, likely and unlikely. At last, by chance, we discovered the head of the wary bird at the edge of the brook; no other part of the body being visible, we in vain endeavoured to point him out to the spaniel, for we were anxious he should see him, that we might observe the mutual actions of the pursuer and the pursued: having however failed in this, we fired low, and the watchful dog caught sight of the bird as his death struggles threw him above the surface, and within a minute he was in our hand. We mention this, not as any thing extraordinary, but merely as a hint to the junior sportsman, that he must keep a very sharp look-out, particularly when a rail is concerned, Nature, it may be observed, gives much caution and cunning wherever the means of resistance in her creatures are sparingly supplied.

2714. *The shooting of the water rail* is sought after by such as wish to be continually excited by hope. A pottering shooter may make one last him out a day; nay, with good management, he may hunt him a week. Mr. Johnson tells us, that the flesh of this bird is of a delicious flavour: we think that of the land rail far superior; however, a fat water rail is preferable to a poor land rail. This bird is found with us the whole year: it builds a rude nest composed of sedge and coarse grass, and lays five or six white eggs (Bechstein says, eight to twelve), rather larger than those of the blackbird. The lesser dabchick and little diver, noted by Bewick, will also sometimes attract the attention of the sportsman in his rambles. Two or three varieties of grebes likewise present themselves in our larger waters, which rank under the name of meres, all of which afford sport for the shooter during the barren seasons of professed game shooting. Of the dab or dabchick we remark, that the shooting of it sometimes engages the individuals of a pretty considerable party, who bet against each other as to the capability of firing so quick as that the shot shall reach the bird before it shall dive, which is done almost with the rapidity of lightning. Where a very ready shooter is concerned, the chances are in his favour; if otherwise, two to one against him. Colonel Montague says of this bird, "It seldom takes wing, but dives on the least alarm, and will remain under water amongst the reeds or other aquatic plants with only its bill above for respiration. Its nest is formed, like the rest of the grebes, of a prodigious quantity of flags or other water plants, but is generally fastened to the reeds or flags, in order to prevent its being carried away by the current. Temminck gives a similar statement. The eggs are five or six in number, of a dirty white; the shape oblong, and less than those of a pigeon. These are generally covered with weeds, so that when the bird quits her nest suddenly they are not exposed to view. Notwithstanding this precaution they are frequently destroyed by the water rat. In large rivers these birds are frequently devoured by pike and trout while they are diving in pursuit of small fish. We once took from the stomach of the last a water rat weighing fifteen ounces, the trout weighed only four pounds. After the breeding season the bird is frequently seen in some of our inlets of the sea, where it is said to feed on shrimps." (*Ornithological Dictionary*, p. 127.) The water rail will eat every variety of aquatic insects. We have detected them in the crop of this bird mixed with the tender tops of aquatic plants.

SUBJECT. 7. *The Moorhen.*

2715. *The gallinule, or moorhen (Furtica Chloropus Linn., fig. 440.).* If any advanced sportsman, like ourselves, will look back to his younger days, and remember with what



THE MOORHEN.

delight he set out, by previous concert, with one or two other juveniles to hunt and shoot the moorhen, although he may now wisely avoid the cold and the loss of time which would be incurred in such a profitless sport, yet we much doubt, whether he will not dwell with some complacency on the retrospect of this youthful shooting, when himself and companions, in despite of their quick sight, ready aim, and well charged guns, had, after the first successful shot or two, found the birds too many for them by instantly diving at the flash of the pan, or perhaps even on hearing the nick of the hammer; for in the degree in which animals are exposed to danger, so in the same degree they are

rendered both wary and expert in avoiding it. Thus it is, as we have already hinted, that on a pond over which a gun is seldom or ever fired, these birds may for some little time fall a sacrifice to the shooter, but becoming a little used to the common enemy, they dive and avoid the shot. In such case however, as with the waterrail last described, by firing a little under them their dip is often circumvented. Nor is man alone the enemy of this harmless sailor on the ponds; we say harmless with confidence, for he is no destroyer of fish; he lives on insects, aquatic plants, and seeds only. With little cunning and much confidence, he is however a most expert swimmer and diver, and for running he has few equals. We are not sure but that we would accept moderate odds between him and the corncrake for running. Whoever has watched his motions must have been struck likewise with the quick elevation of his tail in jerks as a continual habit. The nest of the moorhen is an artless one, and, like those of some other aquatic birds, it may be frequently found within the bend of a willow stump, &c. &c. On one occasion we had an opportunity of remarking an instance of great forethought in a moorhen that resided in a large mill-pond that was alternately high and low, as the mill was or was not at work. The *instinct* of the animal (who would be self-sufficient enough to say it was not the *rationality*?) devised the means of building a floating nest by intertwining its materials between two briar stems, which, being lodged on the water, were subject to rising and falling as the water became high or low. Here, by looking over the sides of the bank to fish up a night line we had laid a few days before, we discovered the nest, and also the parent bird *sitting hard*. We instantly withdrew, and left the night line to its fate; but as we frequented this pond much, but never with a gun, it is more than probable that the bird, accustomed to see us, but not as an enemy, would have retained her seat; as even the most shy birds will do after they have become fully aware that no harm is intended them. Walk quickly, and in a direct line, past a bird's nest, and although the bird be of a very shy kind, and though you almost touch the nest with some part of your dress, yet it is seldom that it will be flushed by your passage. The moorhen's nest usually contains from seven to ten eggs of a light brown colour with rust coloured spots. The young, like those of the two last described birds, are not naked when hatched, but on the contrary are covered with a dark down; they can also exhibit considerable agility, and run or swim with the mother. We would hint to the encouragers of the moorhen, that the young have numerous and potent enemies. Pike swallow them whenever they can reach them; and as coots are also very often found in large ponds, small lakes, &c. &c. the young moorhens are sure to find in them a dexterous and inveterate foe: if therefore you wish to preserve the moorhens, kill off the coots. The moorhen is so well known that we need not give any further ornithological description of it, but refer the inquirer to Bewick, Daniel, or any other acknowledged authority.

SUBJECT. 8. *The Coot.*

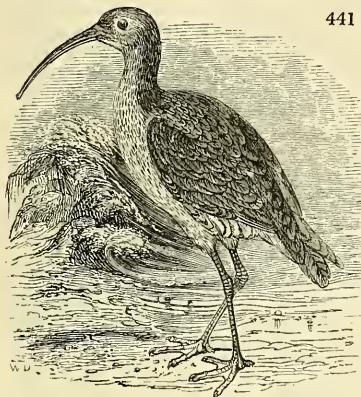
2716. *The coot (Fulica atra Linn.)* is also frequently called the bald coot, from a bald white mark in the forehead, but which during the breeding season becomes of a deep red, being then turgescens with blood. Its manners, at no time very mild or conciliating, then become pugnacious in the extreme, to the utter disquietude of every other inhabitant of the pond, and this is sometimes carried to such a length that the coots are forced to be shot off to preserve peace. At all times they are very destructive to the fry and spawn of fish, and we believe are only tolerated to give an appearance of life to a large pond; nor are

they much followed by any but youths and such persons as in their rambles carry a light gun instead of a walkingstick; which custom we would recommend to the elderly sportsmen of bygone days, in whom the gunning ardour, though damped by approaching infirmity, is not quite extinguished. Such an one, although too much advanced in life to toil over the moors, or even to beat the stubbles day after day, yet, being armed with a light single gun, or, if preferred, with Day's walkingstick gun, can march out in the remembrance of early days, and perchance meet an opportunity of bringing to bag or pocket some one or more of these subordinates of the feathered race, without breach of the game laws, or fear of prosecution for shooting without a licence. If therefore any of our readers of high sporting caste should think we lose our own caste by expending our pen, paper, and cogitation, on these humble subjects, be it known our reasons for so doing will bear us harmless. The bald coot, like the moorhen, is a very common bird throughout England, and a permanent resident. Of all the aquatic birds he confines himself most to the water, being seldom if ever seen on land. Many of them are found to abide so steadily by their birthplace, even though it may be a small pond, as never to leave it: others of them, however, will pay a visit to the sea in winter. The coot swims well, and also dives equally well; and when by necessity he is forced on land, he exhibits rather a waddle than a walk. He is of so solitary a turn that he skulks all day among the sedges, and only comes boldly forth at night, or on a very lowering cloudy day. Indeed, so shy is he, that it is usually in vain to attempt to flush him without a very determined and close-hunting spaniel, and one who will take the water like an otter. Thus provided, interesting sport may be often had in coot hunting, the opposed parties being so well matched. It is, however, then more than an even chance that the coot escapes by diving and hiding himself in the mud, or more frequently, like the water-rail, to sink at the side of the sedge, with its head only above water, by which respiration being kept up, it can remain concealed until his pursuers are tired of searching for it. A still more methodical mode of pursuing the coot and moorhen may be practised on large rivers, as in the Thames for instance, where along its course so many islands and willow beds present themselves, in which not only the coot and moorhen are to be met, but also flappers; and sometimes the parent ducks, water-rail, sandpipers, and dabchicks, are also almost sure to be present. Two persons besides the boatman are requisite, and one very steady and active water dog used to the sport must be taken. Thus armed, beat all the river from Brentford to Wallingford, or as much of it as your time will allow; and the scenery and the little adventures that will be likely to fall in the way can hardly fail to make it a most delightful trip. We have ourselves gone over every inch of the ground we point out, and always were gratified with our sport. Colonel Montague says that the Isle of Sheppy is remarked for harbouring coots, which are in great abundance there; vast flocks of them also are seen in Southampton river. Mr. Daniel says, "The female makes her nest in the rushes, surrounded by the water, with a large quantity of coarse dried weeds well matted together, and lines it with soft fine grass: she lays from twelve to fifteen (some say eighteen or twenty) eggs, about the size of a pullet's, and of a pale brownish white colour speckled with numerous small dark spots, which at the thicker end seem as if they had run into each other, and formed bigger blotches. So soon as the young quit the shell, they plunge into the water, dive, and swim with much ease, but they still gather together about the mother, take shelter under her wings, and do not forsake her for some time. From the circumstance of coots laying so numerous, and hatching twice in a season, they might be expected to be more abundant; but they are at first covered with a sooty coloured down, and are of a shapeless appearance; and while in this state, and before they have learned by experience to shun their foes, the moor buzzard, kite, and others of the hawk tribe, make dreadful havoc among them: the pike is also the indiscriminate devourer of the young of all these water birds." (*Rural Sports*, vol. iii. p. 241.) He likewise enlightens us on a point we believe not generally known, that the goodness of this bird is what many persons are not acquainted with. "The young ones are extremely good put into pies, or boiled with onions like rabbits; and in the winter when fat, and they haunt the sea-shore, they are of as high a flavour and equally as pleasant to the taste as a widgeon." (*Ibid.* p. 243.) Colonel Hawker also appears to think highly of the coot, both as an edible and as a sporting favourite, these birds being in great requisition when they arrive for the winter on the coast, from the immense numbers that may be killed at a shot, as they roost on the mud banks. We are likewise favoured by the colonel with a recipe for the cleaning of them, so as to render them not merely eatable, but also a wholesome food. After being picked of their feathers, cleaned from their black down by means of powdered resin and boiling water, and being further soaked all night in cold water, they look as delicate as a chicken, and eat well. Without this care, however, they are rank and fishy both in taste and smell. The colonel likewise recommends the skinning of them, and then twenty-four hours' soaking in water, when they may be baked either in a pudding or pie, or served soup fashion. A very good practical remark of this writer should not be lost on the coot shooter, which is, to shoot well forward, as one shot before, under the wing, is better than ten in the hinder parts. Reader, *experto crede*.

2717. *There is also a greater coot, the *Fulica aterrima*, but it is not frequently met with. It differs but little from the former except in size, and having a white forehead and red garters, as Bewick expresses it. Foreigners, we are told, eat them on *maigre* days; consequently their fishy taste will reconcile us to their scarcity.*

SUBJECT. 9. *The Curlew.*

2718. *The curlew (*Scolopax Aquata* Linn., fig. 441.) is considered by Linnæus as a species of snipe. With ourselves he is a very favourite object of diversion to follow; he is an*



THE CURLEW.

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is an excellent edible when taken, but much caution is required in the pursuit; nevertheless, we hardly know any bird we have pursued with so much perseverance on many parts of the English, Irish, and Welsh coasts, on which it abounds in the winter. In summer, also, it may be very commonly met with, but differently localised: in that season it frequents the mountains and moors. When we sojourned at Hexham, the extensive moorland tract between that town and Alston in Cumberland, was a very common harbour for them, but they were so shy that it required much caution to get near them. There are either several kinds of them, or otherwise they differ much in size from each other; we have ourselves shot them of the weight of twenty-six ounces, and we have also killed a few which reached to thirty-six ounces, and very many of thirty-three and thirty-four ounces. The birds which thus presented such different weights, did not vary

*much as regarded their colours or markings, or we should have carefully noticed them as distinct varieties. The description Montague gives of the curlew is: — "Bill from six to seven inches long, dusky black, irides hazel; the head, neck, scapulars, and coverts of the wings, pale brown, each feather black in the middle, and lightest at the edges; breast and belly white, marked with oblong black spots; lower part of the back white, with a few dusky spots; the tail and its upper coverts barred with yellowish white and black; quills black, spotted on the inner webs with white; and the legs are long, of a bluish grey colour. Male and female much alike." (*Ornithological Dictionary*, p. 124.) The curlew makes her nest of any of the soft materials which surround her locality, as heath grass, &c. She lays from three to five eggs, of an olive tint spotted with brown. This bird is, of olden date, well prized; and we can bear testimony to the truth of the old proverb, that*

*"A curlew, be she white, or be she black,
She carries twelve pence on her back;"*

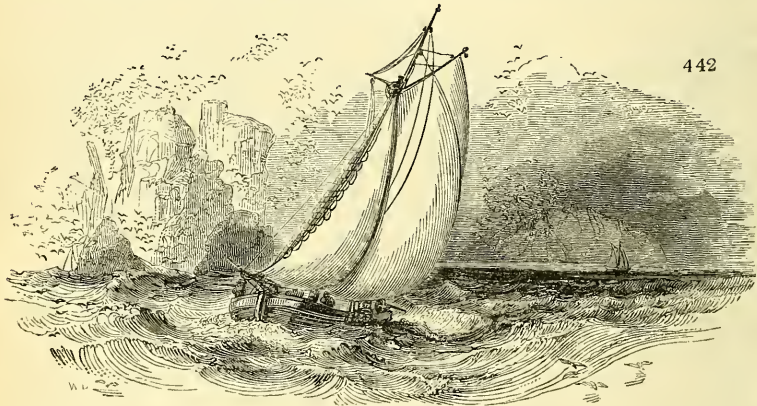
for we consider the flesh of the curlew as excellent eating, but more particularly so during their retreat to the land districts. In the winter some of them, but not all even then, are apt to taste fishy from their shore feeding.

2719. *The shooting of curlew.* These birds are shy, and require much art and caution in the approach towards them. When we were engaged in curlew shooting, which we have followed both in summer and in winter, we were much guided by circumstances. In summer, when they retreat toward the moors, we found that they took a pattern from the plover, and flew aloft around us; and although they did it much more cautiously, yet we seldom failed to get a shot; and as we used a single gun of length and substance purposely for this shooting, we frequently succeeded in bringing them to bag. We have also met with very good curlew shooting on the sea-coast, particularly in the vicinity of Drogheda in Ireland, about the spring time. One season we were very successful on the hills and heaths in Wales, where also we met all the varieties which leave the water to breed on the moors. A large curlew, we would observe, will take a very severe rap to bring him down, and therefore we seldom fired at one with less shot than No. 3.; in boisterous weather we used No. 2. They are suspicious birds, and consequently wary of the gun; it is therefore prudent to make a moderate *détour* in your approach toward them, and also to call your dog in to your heels if you have one; we often however found, that we did our business in this line better without than with a dog. In firing, take the bird as it recedes from you in its circular or oblique course; for although they are not as thickly clad as the duck, they are most effectually secured when struck *with* the feathers than *against* them. There is also a migratory bird known as the *stone curlew*, that is seen amongst us in small numbers in the spring. It breeds in the fallows, and the young, like the partridge, run nimbly immediately they leave the nest.

2720. *Of punt and shore shooting of curlews*, Colonel Hawker says truly, that in autumn they congregate in vast numbers on the sea-coast, roosting in some two or three favourite spots. When these are known, "send a person towards the others with a lantern, on seeing which they will immediately take wing, and may be heard repairing to their next evening haunt, with cries which echo through the air for miles." They may also be approached, he tells us, when on shore, by means of a punt or canoe, particularly in a white frost; and when the tide is up either just after or before daybreak. They are very cautious of alighting until a very strict scrutiny has been made; consequently every precaution should be taken by the sportsmen to conceal themselves from them, by stooping or lying down in the punt, or by keeping close alongside, or, as a sailor would say, "hugging the land;" by which means a raking fire from each gunner may be got, by one party taking a ground shot, and the other taking them as they rise. We cannot quite agree with the colonel, that the curlew, even when he locates near the shore, is so fishy as to be scarcely eatable. We have eaten this bird at every time of the year, and pursued him with avidity in many counties, and we might say countries also; yet he was always to us toothsome food. He is not so good, certainly, when he lives wholly on the sea-shore; but we did not despise him even then. Nothing can be more practically true than that a second gun in reserve is useful in curlew shooting, because, as Colonel Hawker remarks, if one is winged his cries will generally collect the flock around him, some of which will pitch down almost upon him, and offer the shooter some excellent shots. The curlew, according to him, is a great enemy of the punt shooters of the Hampshire coasts, by its springing up from the edges of the creeks, and thus alarming the widgeon settled on the mud.

2721. *The whimril* is common on the Devonshire coast, and is there called the hilly curlew. It breeds in small numbers on the north coast of Sutherland, and makes its nest in a heather hillock. The nest is merely a small hollow scraped out, in which are deposited four eggs. Colonel Hawker notices Titterals, Langston Harbour, and Romney Marsh, as yielding abundance of them. They were also not infrequent on the Essex coast.

SUBSECT. 10. *Seafowl Shooting.*



SEAFOWL SHOOTING.

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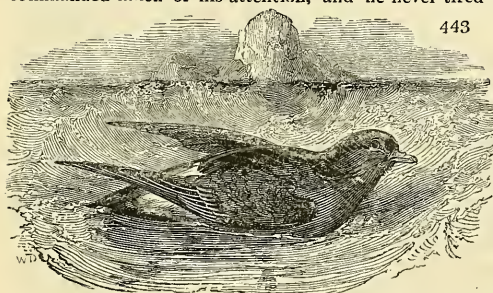
2722. *Seafowl shooting* (fig. 442.) may be nominally considered as distinct from wild-fowl shooting, not only because the former objects are seldom to be met with inland, but also because they are pursued principally in sport, as little profit is to be derived from the greater number of them, they being almost wholly piscivorous; consequently none but those very hard pressed for food can subsist on them. In treating of them, brother sportsman, we are glad to be enabled to relieve you for a little time from the tedium of wading through so much as already has appeared on the land and fenbirds. Fearing, therefore, that our long detail on them might somewhat tire you, we have thus varied our subject, thereby to show our faith in the old saw, that "change of work is play;" and we are convinced that this love of variety, under proper bounds, was implanted in us for the purpose of increasing our observation, and stimulating us both to renewed mental inquiry and to bodily exertion. Hence it is that change and variety are so eagerly sought for by our children, as soon as their faculties begin to dawn. Were they content with one object, they would know little beyond that object; but curiosity being implanted in their mind, they vary their inquiries, and ultimately become informed on every subject. It was only a little time since that the child of a friend of ours, a thorough sportsman, was presented by his father with a rocking-horse, thereby attesting his good opinion of the soundness of

the command, "Train up," &c. Our little friend was so delighted with his present that he, for a few days, might be said almost to live on his steed; but, true to nature, and in a little time becoming tired, variety was sought for, and his father, in a frolic, again placed him on the horse, but facing the tail of the figure instead of the head. Here was novelty, which was all the child wanted, and it had its full effect on him; this horse, he said, went higher and faster than the other; and although he could not fall over his head, he was nearly canted over his tail; but this was a trifle in his estimation, as he had somewhat of a new object to amuse him.

This, however, is but a prelude to the purport we are intent on, that of exemplifying the inherent love of novelty in sporting, which shows itself in some persons, and is then usually carried to an extent, that however their circumstances may allow them to partake of all the various pleasures around them, they are not satisfied unless they can also witness the sportings which are pursued in a manner opposite to their own, on animals that are new to them, and in localities far distant from the scenes of their former chasings. Such was the case with the father of the child who bestrode the rocking-horse. He was in the full possession of every means of enjoying hunting, fishing, and shooting, which latter he most affected, and this was consequently what he was most likely to *run amuck* on. Some friends of his having lately returned from a shooting excursion to St. Kilda's inclement isle, and, travellers like, having probably painted somewhat imaginary scenes of their darings and their doings, awakened in his breast an uncontrollable desire to do the same, and, instead of mounting a rocking-horse like his son, he mounted the deck of a small sailing vessel, which he furnished with all the munitions for a warfare on the seals, the cormorants, swans, geese, gulls, and, in fact, on all the vast varieties of seawolf which inhabited these almost hyperborean regions: In vain his amiable wife represented to him the dangers of such a trip; in vain did the juvenile horseman tell his papa that he should want him to new shoe his nag to make him go faster; in vain did his friends, of whom he had many, endeavour to put before him the perspective of the delights which awaited him, of having his shooting pony brought to the door to take him to his well stocked manor, this year glutted with game, his new gun untried, his dogs the envy of the country, and his assistants ready and on the alert to aid in making his sportings efficient. Alas! he also had mounted the rocking-horse, and was irresistibly beset with the mania of *seafowl shooting* abroad, instead of grouse, partridge, and pheasant shooting at home, garnished as the months advanced with the pursuit of woodcocks, snipes, &c. St. Kilda and seafowl shooting had taken a firm hold of his imagination. He smiled at the accounts presented to him of this isolated spot, the inhabitants of which were cut off, if not from the sympathies of life, at least from all safe communication, at certain periods, with the living beings on the main land, and its inhabitants generally.

This Scottish island, it is true, is celebrated for the vast number and variety of seafowls, which congregate on and around it, and perch on its rocky heights, the numbers being such as to yield endless sport to the gunner, who particularly admires this variety of shooting. Nevertheless, to leave such a home, and such means of enjoying both sporting and social delights, as we have drawn a faithful portrait of, is indeed, to use a vulgar saying, "paying too dear for a whistle." Not but we must confess, were our age different, and had we not the social ties which at present bind us to home, we should be well inclined to risk every danger to witness the scenes of enterprise between offending and defending birds, even in Scotland and the Scottish Isles. The perpetual conflicts which are taking place between the raven and the eagle in the Hebrides, are frequently noted by naturalists and travellers as interesting in the extreme, as well as the battles between the squagull and eagle, which are always fierce. Our friend was eloquent on all these subjects, but, as often happens, that which particularly interests one person will not equally interest another.

2723. *The stormy petrel (Procellaria Pelagica* Linn.) was an object that seemed to have commanded much of his attention, and he never tired when relating the pains he took to



STORMY PETREL.

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discover the nests of these birds, which abound here and breed in the fissures of the tremendous rocks that overhang the sea around; and, certain it is, that the stormy petrel (*fig. 443.*) always engages much of the attention of travellers and naturalists from its striking peculiarities of form and manner. When we inquired after the success he met with, in attempting to shoot them, he candidly told us he killed very few, and all shooters agree that it is one of the most difficult birds to

hit. It is also the least web footed bird known, being about the size of the swallow, and is

occasionally seen congregating in numbers under the wake of a ship; and when such is the case, however calm the weather may then be, it is a certain harbinger of a forthcoming storm. It is also a curious circumstance in the history of these birds, that they are only heard at night, when their cry is shrill, continuous, and piercing; occasionally only one has been seen and shot on land. Of the interest which this bird excites, the following extract from Mr. Loudon's *Magazine of Natural History* is an example:—"As the stormy petrel is scarcely ever to be seen near the land except in very boisterous weather, one of the natives, for a trifling remuneration, agreed to traverse the face of this rock, and take me some from out its fissures: accordingly, accoutred with a rope of hemp and hogs' bristles, coiled over his shoulders, he proceeded to the cliff. Having made one end fast by means of a stake, he threw the coil over the face of the rock, and gradually lowered himself down, but with the utmost caution and circumspection, carefully pressing his foot hard upon the narrow ridges before he at all loosened his firm grasp of the rope which he never altogether abandoned. I had previously thrown myself upon my chest to, enable me to have a better view of him by looking over the cliff, and, certainly, to see the dexterity and bravery with which he threw himself from one aperture to another was truly grand. The tumbling roar of the Atlantic was foaming many hundreds of feet beneath, and dashing its curling cream-like surge against the dark base of the cliff in sheets of the most beautiful white, while the herring and black backed gulls alternately sweeping past him, so as to be almost in reach of his arm, threw a wildness into the scene by the discordant scream of the former, and the laughing oft-repeated bark of the latter. This, however, he appeared entirely to disregard, and continuing his search, returned in about half an hour with seven or eight of the stormy petrel tied up in an old stocking and a pair of the Manx puffins, together with their eggs. The birds, he told me, he had no difficulty in capturing. The eggs of the stormy petrel are surprisingly large, considering the diminutive size of the bird, being as large as those of the thrush. The female lays two eggs of a dirty or dingy white, encircled at the larger end by a ring of fine rust coloured freckles. The birds merely collect a few pieces of dried grass, with a feather or two, barely sufficient to prevent the eggs from rolling or moving on the rock. That of the Manx puffin (the bird laying but one) is of a very round shape, and uniformly white, very much resembling that of a hen. These birds very often excavate a small hole, if the stratum is soft enough to admit of it, like the common puffin (*Alea Arctica* Linn.) by means of their small sharp claws, on the ground of which they deposit their single eggs." (Loudon's *Mag. Nat. Hist.* vol. iii. p. 325.)

2724. Arrived at *St. Kilda*, our voyager, as yet undismayed with his tempestuous tossings as he visited other of the Scottish islands and the main shores, but on the contrary, being rather more keenly bent on further exploration, he landed, or rather stranded, on this spot. Elevated far above the surrounding waters, its rocky sides shoot upwards, presenting vast fissures which the industry of the natives have converted into rude apologies for roads. The summit of the table land is occupied by the natives, who are equally fishermen, fowlers, and agriculturists. One small village contains all the inhabitants of the island. The soil of their island is thin, gravelly, and poor, in its natural state; but it has been fertilised by the industry of the inhabitants. The dwellings of the natives are built of masses of stone huddled together, as it is said, without mortar or any intervening cement, and are flat roofed and very little elevated, the better to bear up against the tempests which continually rage there. An account we have received states, that the male inhabitants are divided into fowlers, fishermen, and husbandmen; but we believe that most of them engage in these several occupations as long as their strength enables them to do so. They rear sheep successfully, and these with the wildfowl, which they take in vast numbers, supply their wants.

2725. The fowlers of *St. Kilda* cannot fail to interest every reader of their adventurous employ. The face of the shores of their island in all parts are precipitous and lofty in their turn; in some it is said the rocks are almost perpendicular, and little less than a mile in height. It is in the fissures and cavities of these that an almost endless variety of sea-fowls retire both to rest and to breed. The waves beneath that continually beat at the base, often wear the shore into an impending boldness, so that it seems to jut out over the water, while the raging of the sea makes the place inaccessible from below. These are the places to which sea-fowl chiefly resort for the purpose of propagation, and where indeed they might bring up their young in undisturbed security were it not for the arts and enterprise of the fowler. The face of the shore in some parts offers to the view a wall of massive stone ten times higher than our tallest steeples. The rocks of *St. Kilda*, for instance, are nearly a mile in height. What must be our awe on approaching the edge of that impending height, and to look down on the unfathomable vacuity below, to ponder on the terrors of falling to the bottom, where the waves that swell like mountains are scarcely seen to curl on the surface, and the roar of an ocean a thousand leagues broad appears softer than the murmur of a brook. It is in these formidable and terrific mansions that myriads of sea fowls are for ever seen sporting, flying in security down the depth half a mile below the

feet of the spectator. To these frightful precipices the cormorant, the garnet, the tarrock, the terne, the gull, &c. resort, and seem to remain in undisputed possession, liable however to the depredations of their most formidable enemy, man. Not that this scene of animation is altogether of a peaceable description, as nothing is more common in the breeding season than the most violent contests. One bird which happens to have no nest of its own will frequently dispossess another, and take possession of the place. This often happens among the gull kind; and the poor bird thus dispossessed by her more powerful invader, may be seen sitting near the nest in pensive discontent, while the other appears quite comfortable in her new habitation. Yet this place of pre-eminence is not obtained without difficulty, nor yet maintained in undisturbed security; for the instant the invader goes to snatch a momentary sustenance, the other ventures upon her own, and always hazards another battle before she relinquishes the justness of her claim. The contemplation of a cliff, thus covered with hatching birds, affords a very agreeable entertainment; and as they sit upon the ledges of the rocks one above another, with their white breasts forward, the whole group has not unaptly been compared to an apothecary's shop.

The celebrated Harvey observes, "There is a small island, called the Bass, not more than a mile in circumference. The surface is almost wholly covered during the months of May and June with the nests, the eggs, and the young of these birds. It is scarcely possible to walk without treading on them; the flocks of birds upon the wing are so numerous as to darken the air like a cloud; and their noise is such that one cannot without difficulty be heard by the person next to him. When one looks down upon the sea from the precipice, its whole surface seems covered with an infinite number of birds of different descriptions swimming and pursuing their prey. If in sailing round the island, one surveys its hanging cliffs, in every crag or fissure of the broken rocks may be seen innumerable birds of various sorts and sizes, more than the stars of heaven when viewed in a serene night. If they are viewed at a distance, either receding or in the approach to the island, they seem like one vast swarm of bees." They are not less frequent upon the rocks of St. Kilda.

2726. *The inhabitants of this island* consume annually nearly twenty-three thousand young birds, besides an amazing quantity of their eggs. On these they principally subsist throughout the year; and from the number of these visitants make an estimate of their plenty for the season. They preserve both the eggs and fowls in pyramidal stone buildings, covering them with turf ashes to prevent the evaporation of their moisture. Such is the principal food of the inhabitants of Feroe and St. Kilda, as well as several other of our little northern islands. Almost all delicacy is a relative thing; and the man who repines at the luxuries of a well served table, starves not for want but from comparison; and it is probable enough that a St. Kilda or Feroe man may be found to exist who surpasses Apicius himself in the pleasures of the table. Indeed, if it be true that the meat most dangerously earned is the sweetest, no man can dine so luxuriously as he, as none ventures so hardly in the pursuit of a dinner. It cannot be expressed with what pains and danger these men take the birds in those high steep cliffs. But there are men apt by nature and fit for the work who take them usually in two ways: they either climb from below into these high promontories that are as steep as a wall, or they let themselves down with a rope from above. When they climb from below, they have a pole five or six yards long, with an iron hook at the end, which they that are underneath fasten to the man's girdle, helping him up thus to the highest place where he can get a footing; afterwards they also help up another man; and thus several climb up as high as they possibly can; and, where they find difficulty, they assist one another by thrusting with their poles. When they arrive at the places where the birds build, they then go about as well as they can in those dangerous spots; the one holding the rope at one end and fixing himself to the rock, the other going at the other end from place to place. If he should happen to fall, the other that stands fast holds him and helps him up again; but if he passes safely, he likewise fastens himself till his companion has also passed the dangerous place. Thus they go about the cliffs after their game almost as they please. A year, however, seldom passes that some of these daring adventurers do not lose their lives. But as some rocks are inaccessible from below, they descend from the top by a rope to those places where their game is found in abundance. The rope is from eighty to one hundred yards in length, the end of which the fowler fastens round his waist and between his legs, so that he can sit thereon holding the fowling staff in his hand. He is thus let down by several of his companions, who lay a large piece of wood on the brink of the rock, upon which the rope runs, and which prevents its being rubbed to pieces by the hard and rough edges of the stone. They have besides another small line, which is fastened to the fowler's body, and which he pulls, in order to let them know how they should let down the great rope, either higher or lower, or to hold still, that he may remain in the place which he has reached. This smaller rope is also used, from time to time, to convey the game to those on the top of the precipice. The fowling parties of St. Kilda generally consist of four persons, each of whom must have a rope of the length mentioned above, or perhaps longer: it is made of a strong cow hide, salted for the purpose, and cut circularly into three thongs of equal length; these thongs being closely twisted together form a three-

fold cord able to sustain a vast weight, and durable enough to last two generations; to prevent its receiving injury, it is covered with sheep skins dressed in the same manner.

2727. *This rope is the most valuable piece of furniture of which a St. Kildan can be possessed; it makes the first article in the testament of a father; and if it fall to a daughter's share, she is esteemed one of the best matches in the island.* By the help of these ropes they descend the most frightful precipices. Mr. Macauley gives an instance of the dexterity of a St. Kilda man, of which he was an eyewitness. "One of them fixed himself to a craggy shelf; his companion descended about sixty feet below, and having darted himself away from the face of a most frightful rock hanging over the sea, began to play his gambols: he swung merrily, and laughed very heartily; and after some time, having afforded all the entertainment he could, he returned in triumph, full of his own merit, with a large string of birds about his neck, and a number of eggs in his bosom. When a fowler is under the necessity of descending the rocks without any assistance from his fellows, he drives a post sloping into the earth, and by fastening the rope to it, lets himself down thereby, without the help of any person whatever. The principal use of the staff used in the descent is to shoot the fowler from one place to another. It sometimes happens that a sort of cavern is formed in the rock, beneath the ceilings of which numbers of birds are frequently taken. A St. Kilda fowler can shoot himself into one of these places, and there take firm footing: on these occasions he frequently unfastens the rope from his body, ties it to a crag that it may not slip from him, and then goes about in the rock, taking what fowls he can meet with." (*Annals of Sporting*, No. xx. p. 97.)

But independent of this taking of fowl for their food, these islanders reap much benefit also by attending adventurous gunners who visit these regions to see the sun, as it were, darkened with the feathered multitude, who mock the gunner, and in derision dart down within a few feet of his head; we have even heard of their rapping it with both wings and beak. Here twenty guns may find work in plenty. Each sportsman, however, should have duplicates of them; otherwise continued firing will endanger both gun and gunner. These incessant firings can hardly fail of making a ready sporter of the most timid person. No home shooting can trepitate one who has shot in these scenes. We have not, however, frequently heard of such a visit being repeated, although the sea-fowl, in all their varieties, are not the only objects of interest seen here. The whale frequently sports his vast mass in the water, and his *blowing* may be heard from the shore even. The seal also may be observed basking on a rock, or he may be seen better employed in breaking up the carcass of a huge cod, &c. Where Nature does little, more room is left for manual labour, and nothing tends more to beget such exertions than the certainty that the common wants of nature can only be supplied thereby. Nothing but ample cogitation and much manipulation could have produced a St. Kilda mountain rope. The adventurous sea-fowl shooter, whose frolic we have related, returned fortunately in safety; but although he spoke in admiration of his late voyage as far as regarded the shooting, he dropped no hint of repeating his visit to St. Kilda's rocky shores. But while we are allowed to marvel at that energetic state of mind which could support an absence from a home where such endearing ties existed, we must yet recollect, were every one to feel these ties of home irresistibly, little would be known of the world at large, Nature's stores would not be ransacked, and our knowledge often would be confined to very limited manifestations. When we think of the vast variety of the feathered race almost unknown, which sport their forms in distant regions, it naturally excites our wish to see these forms; but not *mewed* up, not in the cages of the Zoological Gardens, but in Nature's wilds, and perched on the loftiest summits. The golden eagle, for instance, who would not travel afar to see the male and female busily employed in searching for some suitable crevice at the summit of an inaccessible cliff, into which she deposits sometimes one and sometimes two eggs, of a dirty white with purple spottings? Who would not watch the solicitude of the parents when making their excursions in search of food for the young when these eggs were hatched? See the gyrations of the noble eagle marauding; he has some plot in view: mark that dart, but it was a miss; see another; and now what has he got clutched so fast in his talons? It is some large fowl with which he wings his way to his nest.

"High from the summit of a craggy cliff
Hung o'er the deep, such as amazing frowns
On utmost Kilda's shore, whose lonely race
Resign the setting sun to Indian worlds,
The royal eagle draws his vigorous young.
Strong pounced, and ardent with paternal fire,

Now fit to raise a kingdom of their own,
He drives them from his fort, the towering seat,
For ages of his empire; which in peace,
Unstained he holds, while many a league to sea
He wings his course, and preys in distant isles."

Thomson's Seasons.

2728. *Seafowl*, as understood by sea-fowl shooters, consist of a great variety of birds, many of which belong to northern climates, but occasionally visit our shores; and a few also of the sea-fowl of the tropics sometimes pay us a visit, of which the albatross is an example. It is common at the Cape, and is so large as to measure from the tip of one wing to the tip of the other, ten and sometimes eleven feet; in fact, it is as large as a pelican. It preys on the wing, and is generally shot with a rifle, at which sport some Africans are very

famous, and occasionally one has been pulled down by our own countrymen on the islands of the Scottish border. This bird is said to be particularly fond of the flying fish, and that it is at the moment when it darts on one of these ere it drops into the water, that the practised sportsmen take the opportunity of firing. It is with the flying fish only a choice of his executioner. He rises from the water to escape the jaws of the devourers below, particularly of the dolphin, who is seen to dart into the air after him. It would be most interesting, with a punt gun well shotted with small bullets, to be able to seize the moment when both dolphin and albatross have reached the flying fish.

2729. *The gull family (Larus Linn.)* is a very extensive one, even the albatross is a member of it. Their generic characters are, bill compressed, elongated, pointed, with the upper mandible bent towards the end, and the lower forming underneath a salient angle; their nostrils, placed toward the middle of the bill, are long, narrow, and bored through; their tail is full; their legs rather long; and the thumb short. There are several species, we believe not less than thirty, and all are voracious in the extreme; they build some in the sand, and others in the clefts of rocks. The common gull, or seamew (*Larus Canus* Linn.), is too well known to render any particular description of him necessary, yet he has many estimable qualities. With a strong and straight bill, but bent downwards at the point, it possesses the means of taking a firm hold of its prey. A lesser variety of gull is also observed here, but which does not differ in body or habits from the larger one; each lives on dead as well as living matter, and sailors who have visited the north seas describe the extraordinary number of these birds congregated together, and seen devouring the remains of the carcass of a dead whale. Among the varieties of the gull met with on our seas, we may particularly notice the black and white, the great grey, the black backed, and the silvery, the common seamew, and the kitty-wake. The seafool shooter may however, without being many leagues from the British shore, meet with twelve or fourteen kinds of gulls; Colonel Hawker says thirteen. Gulls, when shot on shore, are usually brought down by the gunner taking them in any other direction than when they face him. When shot at from the deck of a vessel, there are usually so many hovering around, that it is only requisite to wait a little for any variety of shot you may choose. The gun used should be of the kind recommended for duck shooting generally, its weight when the gunner is on board being not of much consequence; and it must be remembered that these birds will most of them require a full sized gun, full sized shot; and if the heavy shot noted by us when treating of shot, p.766., be used, so much will the chance of success be increased. From what we have seen of deck or vessel shooting, we have witnessed the best amusement from the gull tribe congregating around; therefore secure one as soon as possible, and having so done, strip off the skin with the feathers from the carcass of the bird, which may be thrown away. His head, wings, and legs, must be preserved entire, and some light matters, as rags, &c. being put within the skin, tack it up, attaching it to twenty or thirty yards of packthread. As the birds fly around the vessel, throw up the stuffed bird towards them, which will induce them to follow it, and come within shot. This ruse will succeed in most cases, and many shots may be obtained by its means. Some deck gunners are singularly adroit also in imitating the call of the birds which fly around the vessel, whether it be a whistle, a scream, or a hiss, &c. Any other sounds also, which are made by the seabirds generally, when well imitated, will draw them within shot of the vessel. The decoy figure we have mentioned, when thrown on the water, and snuffered to lie, will often attract them to dart on it; and we have many times obtained a shot by this ruse, both by land and water; it is often likewise very successful when thrown among plovers on land. To detail in this sketch all the varieties of seabirds which may come within the watchful gunner's reach from the deck of a large vessel, or the thwarts of a small one, would carry us to an almost interminable length. One sea trip will do more to initiate the inexperienced than all we can dictate on the subject. We cannot, however, let these scanty remarks on the gull pass without adding thereto their quality of being certain harbingers of bad weather. When no longer able to keep the sea, they naturally repair to the land; and as prevention is preferable to cure, so instinct enabling them to foresee a storm, they come inland of their own accord, without waiting to be forcibly thrown on our shores. Instinct is here preferable to intellectuality, and their own feelings dictate to them the coming storm more than all the instruments of the philosopher. Even old Betty's corns beat her master's barometer by some hours' advance. It is by these internal warnings that the habits of animals present almost a certain indication that storms of wind or water are approaching. When sheep are seen to eat greedily, those who observe their manners daily prognosticate rain; and they are themselves probably laying in provisions purposely for the rainy day. When also they are more than usually alert, and gambol about, it is observed that rain is not far off, but being near at hand, certain indications within lead them thus to expend their stores of excitability, that when the storm does arrive they can content themselves in quiet repose. Ducks and geese are clamorous before rain and wind. Are they calling for more water, which certainly brings before them more worms, &c.? Does the moor game quit the mountains, and visit the stooks below, because rain is at hand?

SECT. IV. *Wildfowl and Wildfowl Shooting.*

WILDFOWL SHOOTING.

2730. *Wildfowl and wildfowl shooting* though of a less masculine character than the sport last described, but being equally a legitimate object of the gunner's pursuit, will next occupy our attention. Cold and bleak as the weather may be, such a hold has this sport on the minds of some persons, that wholly independent of any other return than the mere capture of these birds, innumerable difficulties and dangers are encountered. Cold must necessarily be despised, hunger must present no terrors, as it is by no means an infrequent accompaniment of the chase; for should the pursuit be made in a punt, one rolling wave, should it do no further mischief, it may wet the inmates to the skin, and saturate all the eatables on board the vessel, however carefully packed by the butler or cook, and that even when the anxiety of the mistress herself has overlooked the process of both cooking and packing. As to the disappointments and the ambiguous pleasures of hope deferred, they are constant garnitures of the sport: "the worse our luck to-day, the better to-morrow," says the true zealot; and we ourselves well know how to appreciate the value of this balm. It is not unlikely that there may be yet some veterans in the horse artillery who may remember something of this wildfowl shooting mania in ourselves, then an officer in the B. Troop, when it was quartered at Lewes in Sussex. They may also remember how our own ardour in this sport was responded to by that of two servants, our man and our dog, both as zealous in the cause as ourselves.

Our dog so valued was a cross between a pointer and a water spaniel: our attention to this animal, and his own great docility, enabled him to enact the parts both of pointer and spaniel very respectably. In our mind's eye we now see him, nearly covered with snow, plunge into the river after our shot, bring his bird, and then immediately (notwithstanding all we could do to prevent it) roll in the snow, as Paddy would say, "to dry himself." As the frost was severe, it followed that the snow soon became ice, and the poor beast so stiffened as to be incapable of proceeding. We, in memory's eye, see ourself and our man servant busily employed in cutting away the icicles to liberate him. We notice this so circumstantially as a practical hint to the wildfowl shooter; for a gentleman who also frequented the Lewes Levels at the same time with ourselves, neglecting to do this, had his dog frozen to death, with the deserved stigma of cruelty attached to him for neglecting a faithful servant. When dogs will roll in the snow after having been in the water, if the weather be severe, the snow should be either wiped, brushed, or (if already become hard) cut off, or the poor brute will be so frozen as to be incapable of proceeding, and must perish of cold, to the disgrace of the master and the loss of the dog. For ourselves we look back with delight at the scenes we then passed over, for the various wildfowl were so plentiful, that it only required a little nerve to brave the cold, and difficulties which half frozen ditches, a continual pelting of storms of hail and snow, ever and anon showered down; we repeat, it was only requisite to brave these to get almost as many *wildfowls* of various kinds as we pleased. Our man servant likewise deserves honourable mention for his zeal in our service, who, although of a delicate constitution, would brave cold, wet, and every privation, to bear us company in our sportings, which were at these times pursued with an ardour that was not to be defended, because it risked the health and life of both parties. Many times during that winter, after spending some hours on the levels, and having gone

home, have we both returned to them in the evening, to watch the night flights, and seldom returned unrewarded. That winter proved to us the most productive of wildfowl, both in number and variety, of any we remember before or since. Indeed, one such season is calculated to fix the love of this variety of shooting deeply in the minds of many, who might be before even indifferent to it. We have heard of more than one who never suffered during the winter months one night to pass away without a walk to the oozes, the shores, or the river sides, on every favourable night of this memorable winter.

2731. *A nightly excursion on shore*, however productive of sport, has, nevertheless, not satisfied many zealots in wildfowl shooting; but to enjoy the sport in greater perfection, some, we know, have abandoned their homes for weeks even, having furnished themselves, at considerable expense, with a small sailing smack, fitted up with the necessary accommodations of sleeping berths, cooking conveniences, suitable attendants, a row boat for creeks, and a punt for oozes, with two or three water dogs, &c. &c. Thus equipped they have taken coasting voyages that have extended half way around our island; some few have gone entirely round it; although it must be confessed that the northern coasts have less frequently been traversed than the other shores of our country for winter shooting. During the summer months it is very common to extend the trip, and the adventurous will then continue their course to a very considerable extent. On such an expedition we also once ventured in all the ecstacy of hope; for having, as we have shown, enjoyed the sport in perfection on shore, we could not but expect uninterrupted happiness afloat. But alas! how our passions blind us! for we forgot to take into our account our tendency to sea sickness, when the water was any thing but smooth. We would not, however, disappoint our kind invitor, and therefore we went on board; and while the water continued unruffled, and the glass and joke went round, we remained pleased, and indeed delighted with our meditated excursion. Alas! evening arrived, the wind sprung up, our stomach began to rebel and heave with every heaving wave. Repentance overtook us, but it was too late; and no means offered of being relieved from a most distressing sea sickness through the whole of the night. Morning dawned, and we were put on shore, right glad to be there; and although not cured of our attachment to the sport, yet we thought the purchase too dear, if always to be thus paid for; and we have remained a shore shooter to the present time. Nevertheless, an expedition like that we have noticed, offers a fund of amusement not easy to be met with on any other plan; and the sea-coast gunner, be it remarked, can accomplish his purpose without turning his stomach inside out by a heavy lurch, or violent pitch of a rigged vessel. He can construct a punt or small boat for navigating the shallows; but he, nevertheless, must not consider himself as perfectly exempt from danger even then. If ice be in the river which feeds the oozes he shoots over, it will accumulate, and it may in some cases crush his feeble vessel: many other casualties he may also be overtaken by. The French hut-shooting therefore, figured at p. 93. would suit an old or timid sportsman determined to persevere, better than a more active pursuit of these wanderers through all their wide spread rangings. A detailed account is there to be met of this *domestic shooting*, which, for convenience, can only be matched by the situation of some millers whose machinery, commanding a view of an extensive sheet of water, enables them, through loopholes in their boardings, to pick off these wild travellers as fast as they arrive, which, under some circumstances of weather is very often.

2732. *A general enumeration of the seafowl*, which form the principal objects of the gunner's pursuit, will next occupy our attention. Most of them are web footed, and such as do not breed on our coasts visit us during the winter months, leaving the frost and snow of their own localities to partake of our mild climate, and recreate in the plenty they find. We also levy heavy contributions on them for this their freedom. They therefore borrow their food from us, and repay us by leaving their bodies in the hands of the gunner.

2733. *The swan family* (*Anas* Linn.) stand at the head of web footed birds, and will therefore first engage our inquiry. Colonel Hawker has taken much pains to illustrate the different species of this bird; and also Mr. Yarrell; and to the works of those gentlemen we would refer the reader for information on the subject. The two last discovered species have, with much justice to that critical artist and naturalist, Bewick, been termed *Cygnus Bewickii*, and may be seen at the house of that excellent bird-stuffer, Leadbeater. The hooper is the only swan that breeds in the northern British isles. The Polish and Bewick's swans visit the unfrozen lakes and most salt-water bays in the north during winter, but go still further north to breed. Every winter, some of the three specimens are shot about Little-ferry and Bonar Bridge, in the county of Sutherland. Colonel Hawker states, that in the winter of 1838 he killed several; their weights ranging from thirteen to twenty-one pounds (8th edition, p. 260.). Such sportsmen, however, as visit the western isles of Scotland may meet with them all the year round, in consequence of its being a breeding station. In Iceland, as already noticed (p. 80.), they are likewise caught during their moult, being hunted by mounted sportsmen with fleet and hardy dogs. The rapidity of the flight of the wild swan is almost proverbial. Hearne in noticing it observes, that, "notwithstanding their size, these birds are so extremely swift on the wing when in full feather,

as to make them more difficult to shoot than almost any others, it being frequently necessary to take sight ten or twelve feet before their bills. This, however, is only when they are flying before the wind in a brisk gale, at which time they seldom fly at a less rate than a hundred miles an hour; but when flying across the wind, or against it, they are not able to make any very great progress." Of the Brent geese he says, that, "when migrating to the south, they generally avail themselves of a strong north or north-westerly wind, which makes their flight so swift, that when he has killed four or five at a shot, not one of them fell less than from twenty to fifty yards from the perpendicular spot where they were killed." This is a most interesting bird in many points of view, but our limits forbid us to enlarge on it further than by a few words hereafter.

2734. *Wild geese* (*Anser* Linn.) also occupy the wildfowl shooter's attention. Of these there are six sorts which visit us in the winter. The grey-lag is the first, and is notable as being that from which we derive our common goose, but which is now become by domestication considerably larger than its primogenitor. On the wing these birds may be distinguished by always flying in a figure. In their wild state, and in their winter visits to us, they feed on the coasts, and often enter inland to seek for such grasses as suit them; more particularly they are fond of green wheat. When thus discovered, by stalking under cover of a living horse by means of a screen of boughs, they often may be approached, and a remunerating shot made for what they have eaten. Colonel Hawker recommends that we "ascertain in the water meads what parts they have used (which we shall be able to see by their dung and feathers), and then that we should wait for them at dusk in some ambush that commands the fresh places adjoining. Contrive, he says, if possible to get the line of a dyke or drain, so as to take the company on their flank." (P. 219.) As an edible, we are told by sportsmen that this goose is inferior to the Bernacle or even the Brent goose. In the month of March, flocks of wild geese come from the south to the Highlands of Scotland, frequenting the lochs, and feeding on the grass at their margins. By lying in ambush one may kill as many as six of a morning, particularly on Loch Shin, Loch Largail, and Loch Arigell, in Sutherlandshire. In August, these lochs afford first-rate flapper (young wild geese) shooting, which is practised similarly to wild duck flapper shooting, but is nobler sport. The "gray-lag" breeds in a great many of the fresh water lochs of the counties of Ross and Sutherland. It lays from six to ten eggs, which are usually hatched by the 20th of May. The "bean" goose is another bird that breeds in the same counties, but it is much more rare, and usually later in making its nest than the "gray-lag." Loch Shin, in Sutherlandshire, and Sheeness-Caig Loch in Wester-Ross, have generally a few pairs breeding in the season. The white-fronted goose visits all the northern fresh-water lochs that have grassy bottoms, and when the lochs are frozen they retire to the sea. They do not breed in any of the British isles. The Brent and Bernacle species also visit our northern sea-shores during winter. Their edible qualities are not good, as they taste fishy, from feeding much on sea-weed.

2735. *Of the Siberian goose* (*Anser ruficollis*) and the laughing goose, or white-fronted (*Anser albifrons*), we have little to say of our own knowledge. Colonel Hawker tells us, that they were unknown to the gunners on the Hampshire coast until the frost of 1830, when about eighty of them pitched in a field near the village of Milford, where, in a humorous description, he informs us how they were beset by a host of gunners with only moderate success; but that, on the next day, a volley from the colonel's two large barrels brought down about twenty, of which number twelve only could be taken up. It is further remarked, that they take a very hard blow to bring them decidedly into the shooter's possession.

2736. *The cormorant* (*Pelicanus Corbo* Linn.). This family owns three varieties, — the great black, the colegoose, and the crested. The common cormorant weighs about seven pounds. Colonel Montague, however, notices one which weighed eight, and was three feet three inches long, and four feet eleven in breadth. In colour it varies, — being sometimes dusky, and dashed over with an ashy tint; the belly of a dirty white; a short pendent crest also graces the neck of some. It breeds on most of our sea rocks near the very summit. The shag is often its neighbour, but usually builds its nest somewhat lower down. In the winter the cormorant frequents the fresh waters, in which its aptitude in diving is very great, and enables it to subsist by taking the fish found there. Did our sheets allow us space, we could offer some entertaining accounts of its habits; the reader, however, will find these, and much other interesting matter concerning it, by referring to Rennie's edition of Colonel Montague's *Ornithological Dictionary*. Mr. Dunbar says of these birds, that there are only two varieties of the cormorant — the common, and the green, or the "green shag." The colegeese, he says, are the young of the common cormorant in their first year's plumage. They do not attain the black plumage until the second breeding season. They breed the next year after they are hatched. In winter both old and young have the same plumage. They never breed in the same rocks with the green shag, but select rocks for themselves. They choose for their nests higher and more inaccessible rocks than the green shags do.

The cormorant visits the fresh waters also; indeed, we have ourselves seen it in the

Welsh rivers and lakes; and we have occasionally observed it perched in the trees. Colonel Montague likewise furnishes an amusing account of the readiness of the cormorant to submit to domestication, under which it even becomes so tame as to be troublesome. One sent to the colonel he notices thus: — “Having received it after a twenty-four hours’ journey by coach, every sort of food at hand was offered to it and rejected; even raw flesh was unacceptable, and no fish could then be procured: he was, consequently, compelled to cram it with raw flesh, which it took reluctantly, but without offering any offence with its formidable bill. Having retired to the library after seeing it fed, he was surprised, in a few minutes, to see the stranger walk boldly into the room, and join him at the fireside with the utmost familiarity, resuming the task of dressing its feathers, until it was removed to an aquatic menagerie. At the sight of water it became restless, and when liberated, plunged and dived incessantly for a considerable time without obtaining a single fish; after this it made no further attempt for three days, appearing convinced there were none to be found.” (*Ornithological Dictionary*, p. 101.) The cormorant is often followed by the gunner for shooting practice; but it offers no temptation on the score of its table qualities, being rank in the extreme. We have elsewhere detailed its valuable qualities as a fishing bird for the use of its master (see *anté*, p. 22.). “In England,” as Willoughby informs us, “they were employed to take fish, being first hood-winked, after the manner of falcons; and a leather thong was fastened around the lower part of the neck to prevent them from swallowing their prey. When taken to the river the hoods are taken off, and they presently dive under water, and pursue the fish; when they have caught, they arise quickly to the surface, and swallow the fish, till each bird has swallowed five or six; their keepers then call them to the fist, to which they readily fly, and one after another throw up their booty, a little bruised with the nip given them by their bills. When they have done fishing, they loose the string from their necks, leaving the passage to the stomach free and open, and for their reward give them part of the fishes they have caught.” Whitlock tells us, that “He had a cast of corvorants, *manned* like hawks, which would come to hand.” He took much pleasure in them; and relates, that “the best he had was one presented to him by Mr. Wood, master of the corvorants to Charles the First.”

2737. *The wild duck (Anas Boschas Linn., fig. 445.)* in size is rather less than the tame duck, which has been somewhat enlarged by the fostering of domestication. In



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its plumage the wild differs but little from the tame duck. The wild mallard, or drake, weighs usually about two pounds and a half; but has been known to reach to three and a half. The bill is yellow; the head and upper part of the neck are ornamented by a deep glassy green, terminating in a white ring. The female is less in size, and not distinguished by any splendour in the colours of her plumage. A somewhat larger variety is sometimes taken in decoys, and is also occasionally brought down in

wildfowl shooting. This difference in size puzzles some persons as to the designation to be given to such birds; but we would inform them that they are nothing but ducks that have been bred between the wild and tame birds, which, being forced by frosts out of the farm ponds or canals, are obliged to take to the company of the wild breed altogether. Among wild ducks we hardly need observe, that the male is called the *mallard*, and the young birds are designated *flappers*. The parents pair in the spring, and the hens incubate in some slight shelter, and lay from ten to fourteen eggs, which she sits on about thirty days. True to nature, the ducklings have been seen almost as soon as clear of the shell to roll into the water, which instinct has taught them immediately to love, and to frolic about in with delight as their proper element. It is well for them that they possess this precocity, otherwise the slow growth of their wing feathers would make prisoners of them to their utter destruction. When hatched at a considerable distance from the water the old duck, it is said, has been seen to take her young in her beak, or between her feet; probably she has employed both beak and feet to remove them to the water as their natural element, where they at once swim with ease and

confidence. Such are the impressions of instinct. Mr. Daniel very justly remarks, that "the wild duck is an artful bird, and does not always make its nest close to the water; an instance Mr. Tunstall mentions of a nest being found at Etchingham, in Sussex, upon an oak tree twenty-five feet from the ground, where the old duck was sitting upon nine eggs, which were supported by some small twigs laid crossways."

The gamekeepers of Mr. Eyre of Passop, Derbyshire, in 1801 observed a wild duck fly out of a large oak, in which the year preceding there was a hawk's nest; upon examining, the nest was found in complete repair, and contained two eggs recently laid by the duck in it." It is a curious circumstance, but, as we see, not more curious than true, that the caution of wild ducks in many cases leads them to build in trees. Percy Scott, Esq. a worthy and well informed magistrate of Newport, Isle of Wight, has assured us of several instances of this kind, which had fallen under his notice in Ireland, and more than one has also passed under our own. Wild ducks are, therefore, native here; but they by no means breed with us in numbers sufficient to supply the wants either of sportsmen or of a consuming public. When you have either shot, or are going to purchase what you consider to be a wild duck, examine the colour of the claws, which are black in the wild species, but of a dingy yellow in the tame. As wild ducks separate to breed, they usually may be found in pairs on the rivers; and the law has wisely endeavoured to throw its shield over them, to prevent the double destruction of themselves and progeny. But it happens that many wild ducks being bred here, they do not congregate; at least they do not join the great shore flights we shall yet have to notice. These ducks, however, have their morning and evening flights, at which times the gunner may lie in wait for them a little before dusk; by carefully concealing himself, he may get a shot as they go to or return from their evening visit. When it is moonlight, they will often wait until late; but then the sport is most certain, as the birds feel more security at that time than at any other, and will approach less warily. Nor is it generally known how usual it is for almost every tolerably large pond to be visited by wild ducks, provided such pond be not in the immediate vicinity of inhabited houses.

2738. *In-shore shooting of wild ducks* may be said to be legitimate sporting as soon as the *flappers*, now young ducks, take wing, which occurs towards the middle of August, until which time they are not worth shooting, for the table at least, unless they be the produce of a very early hatch. It is true that Colonel Hawker directs that in July you should hunt the rushes in the deepest and most retired parts of some stream, and when you have sprung the old duck, you may be tolerably certain that the flappers may be found also; and as their wings are not yet strong, they will fall an easy sacrifice. True, colonel, they may; but surely you would hardly call this sport, or even fair play; nay, the pot shooter would, in all probability, refuse to be concerned in it, for the birds at this age are not worth eating; nor will we believe that so finished a sportsman as Colonel Hawker would himself be engaged in what may be called "a murder of the innocents." Indeed, he himself remarks on the practice, that "it is more like hunting water rats than shooting birds." But when the flappers have taken wing, then indeed the shooting of them may be fairly termed legitimate sporting. In this case walk in a very deliberate manner along the side of a brook or rivulet. If it be not too deep, it will increase the chances to walk up the brook itself, having with you one or more well broken water spaniels, if mute so much the better; at all events they must not be such as flounder on before you, disturbing every living creature in their passage; on the contrary, let them be well nosed, but very patient: they must be as still in their manoeuvres as in their tongues, hunting here and there, as it were, on the sneak, and yet with an intensity of purpose that shall not pass over any lurking bird however secreted. For this purpose Colonel Hawker with much judgment recommends a mute water spaniel.

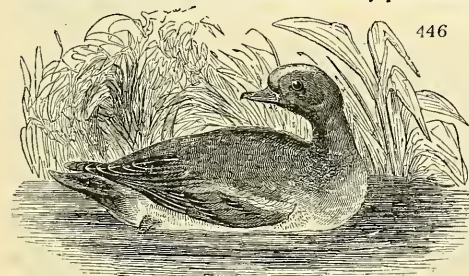
The fens of Lincolnshire, Cambridge, and Martin Mere in Lancashire, are excellent localities for duck as well as every other wildfowl shooting. This species of shooting both of duck and flapper can likewise be pursued in perfection on the borders of many of the rivers of North and South Wales. It is true that in some localities it will be necessary to ask permission, but in many others none is required. In some of the lakes of South Wales this shooting is also admirable, but in Scotland it is even more so; and there it is, in most instances, entirely at the sportsman's pleasure to do as he chooses. Reed shores form admirable scenes for good fowl shooting on the large meres, if you lie in wait for the passage of the birds, with a steady dog that will stand at your heels without sound or motion. So situated it is seldom that half an hour passes without a shot presenting itself, even in the daytime. In the morning and evening flights the chances will be greatly increased; but in these cases the stranger must have a guide, or he must have made some previous observation, to insure success. Streams which are sheltered by trees and hedges are the chosen resort of the duck tribe, and the certain rendezvous of that sporting trump the teal. It is however but proper to observe, that while we, like other sportsmen, would eulogise, and be very apt to take a shot at a flapper, if it came in our way, yet are constrained to state that the deed is illegal, the last game act having a clause to prevent wildfowl, either young or old, from being killed from the last day of March to the first of October. While we would protect all indigenous breeds of game, those wild birds that visit us in myriads

during certain seasons, and then locate themselves here wherever they find food, should, as we think, be considered fair game at any time of the year. We should be inclined to suspect that the owner of some decoy had had a hand in framing this interdiction.

2739. *The pochard or dun bird* (*Anas Ferina* Linn.), as Daniel observes, "is about the size of a widgeon, weighs one pound twelve ounces; its length is nineteen inches; breadth two feet and a half; the bill is broader than the widgeon's, of a deep lead colour, with a black tip; irides orange; the head and neck deep chesnut, with a small triangular spot of white under the centre of the lower mandible; the lower part of the neck and breast, and upper part of the back, dusky black; scapulars and wing-coverts nearest the body of a greyish white, elegantly marked with narrow lines of black; the exterior wing-coverts and quills dusky brown; secondary quill feathers regularly edged with a stripe of white; the belly ash coloured and brown; vent feathers and coverts of tail black; the tail consists of twelve short feathers of a deep grey; the legs lead coloured. The female has the head of a pale reddish brown; the breast is rather of a deeper colour; wing-coverts and belly cinereous; the back marked like that of the male. These birds are eagerly bought by the London poulterers under the name of dun birds, as they are deemed excellent eating: the greater part of what appear in the markets are caught in decoys; but the construction and mode of working are perfectly distinct from that wherein the other wildfowl are taken. A decoy for dun birds is called a flight-pond, and has nets fastened to tall stout poles twenty-eight or thirty feet long; at the bottom of each pole is a box fixed, filled with heavy stones, sufficient to elevate the poles and nets the instant an iron pin is withdrawn, which retains the nets and poles flat upon the reeds, small willow boughs, or furze. Withinside the nets are small pens, made of reeds about three feet high, for the reception of the birds that strike against the net and fall down; and such is the form and shortness of wing in the pochard, that they cannot ascend again from these little inclosures if they would; besides, the numbers which are usually knocked into these pens preclude all chance of escape from them by the wing. A decoyman will sometimes allow the haunt of dun birds to be so great, that the whole surface of the pond shall be covered with them previous to his attempting to take one. Upon such occasions, he bespeaks all the assistants he can get to complete the slaughter by breaking their necks. When all is ready, the dun birds are roused from the pond, and as all wildfowl rise against the wind, the poles in that quarter are unpinned, and fly up with the nets at the instant the dun birds begin to leave the surface of the water, so as to meet them in their first ascent, and they are thus beat down by hundreds. At the pond of Mr. Buxton at Goldanger, in Essex, as many pochards have been taken at one *drop* as filled a waggon, so as to require four stout horses to carry them away; and the lower birds in the pens have been known to be killed and pressed entirely flat from the numbers of their companions heaped up above them by the fatal stoppage of the poles and nets. The few attempts made to domesticate the pochard have been hitherto unsuccessful. They do tolerably well where there is plenty of water, but cannot bear walking about on hard pebbly grounds." (*Rural Sports*, vol. iii. p. 281.) We have followed the above quotation throughout its whole length, from the interest which the detail excites. Colonel Montague kept a dun bird for some years in his menagerie, which was very tame, and appeared happy. The male bird has a tracheal labyrinth, which is shorter than that of the scaup, and nearly round throughout, according to the description which Dr. Latham has given of it. It is more round than the upper side, but is crossed with a small bony partition as in the scaup; but in this bird it forms an obtuse angle with the rest of the trachea; whereas, in the scaup, it is continued onwards in a straight course. The use of this apparatus is, without doubt, to enable the bird to make certain intimations, by which it communicates with its fellows; it is, in fact, his horn of communication.

2740. *The widgeon* (*Anas Penelope* Linn., fig. 446.) provincially known as the pundle wheme or whim; is too common in every poulterer's shop to need any particularisation,

further than that it weighs about twenty-four ounces, and measures twenty inches in length. It is subject to considerable variety in its plumage, which is another reason for not entering upon a more critical detail of it. The hen widgeon is of a more rusty brown than the cock; the tips of the lesser quill feathers are white, as is the belly also. Mr. Daniel observes, "This species is common on most parts of the old continent; it is caught as low as Egypt, from the middle to the end of November, by nets in the marshes,



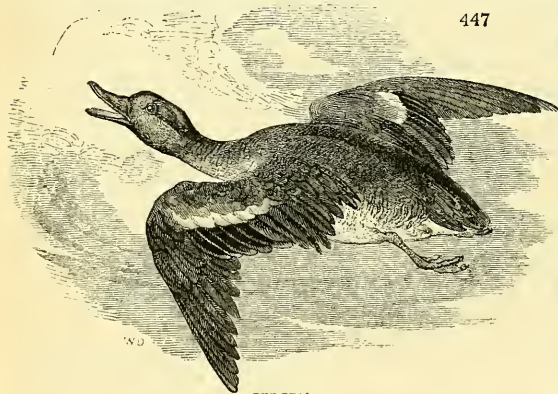
THE WIDGEON.

before the departure of the waters; it is also found at Aleppo in plenty during the winter;

is observed likewise in the Caspian Sea and its neighbourhood; and in most parts of Europe, as far as Sweden. It abounds in England during the winter months, and is caught in the decoys. It is said not to breed in France; nor is it certain that it does in this country. Both sexes are alike until the spring after hatching (this obtains in the pintail, the gadwall, and the shoveller, which are all grey, and have no beautiful feathers when young), when the males about March gain their full plumage, but lose it again the end of July. Mr. Dunbar says the widgeon breeds in Sutherlandshire, and in the island of Lewis. It lays from six to nine eggs, rather elongated in shape and of a cream colour. The summer plumage is very beautiful, and the feathers of the male are much sought after for making artificial flies. Only of late years it has been discovered that the widgeon bred in the British isles.

2741. *The divers* form an assemblage of birds so named by decoymen, and the term is adopted by some naturalists to distinguish a group having a singular adroitness in diving. Mr. Daniel particularises the scoter, scaup, golden eye, and morillon, among them. Colonel Hawker informs us, that "of those birds literally and properly called divers, there are seven kinds to be found in Great Britain, exclusive of six others which are separately classed as the genus *Mergus*," (P. 209. 8th ed.) Mr. Daniel says of them that "they vary much both in plumage and size; some weighing two pounds and a half, and others a pound less, are caught in the decoys with the ducks, &c." In hard weather they frequent the shores and the tide rivers in great plenty, and are almost always at that season fat and in good condition: they do not fly in such large flocks as many of the duck species, and usually close to the surface of the water, and bear very hard blows from the shot without dropping, unless struck upon the head or wing. The scoter is seen in prodigious numbers from November to March on the French coasts, especially if the wind be from the north or north-west. The day seems to be spent by these birds between diving and flying to small distances over the water, which they do so low as often to dip their legs in it: they swallow their food whole, and soon digest the shells, which are found crumbled to powder among their excrements. They have been kept tame for some time, and will feed on soaked bread. The flesh tastes fishy in the extreme, and, from this cause, is allowed by the Roman Catholics to be eaten on fast days and in Lent. The morillon is the young of the golden eye in its first year's plumage.

2742. *The teal* (*Anas Crecca* Linn., fig. 447.) is a deserved favourite with the sportsman, as well as the epicure. Colonel Hawker says of it, "Of all the prizes that a wildfowl shooter



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could wish to meet with, a flock of teal is the very first. Independently of their being by far the best birds of the whole *anas* tribe, they are so much easier of access, and require such a slight blow, that no matter whether you are prepared for wildfowl, partridges, or snipe, you may at most times, with very little trouble, contrive to get near them; and this being once done, you have only to shoot straight to be pretty sure of killing," (Hawker on Shooting, p. 264.) Mr. Daniel also remarks on it as one of the

most delicate birds that grace our tables. Like some other wildfowl, it is so well known to every one as not to require any critical description. It is somewhat remarkable for having a semi-cartilaginous labyrinth towards the end of the windpipe. Some others, also, of the wildfowl exhibit structural peculiarities here, adapted to the particular sounds they emit, which are in many cases very singular; indeed, so much so, that they could not be emitted through any other agency than a structural one particularly adapted to the required modification. The male bird weighs twelve ounces, and measures rather more than fourteen inches in length. The female is less ornamented than the male; her wing, however, bears a beautiful green spot like that of the male, but she wants the splendid markings of his head. It is, says Colonel Montague, "the smallest of the duck tribe. It comes to us in winter, and frequents our fresh waters in small flocks. Many are caught in the decoys; and some few breed with us." "Mr. White in his *Natural History of Selborne* mentions young teal having been taken on the verge of a pond in Wolmer Forest. It is

also said to breed in the mosses about Carlisle ; and we are informed they have been known to breed even in confinement.

"The nest of the teal is said to be uncommon in France, and that its breeding grounds are more towards the north. It is made of rushes, lined with down, placed on the side of a pond, so as to rise or fall with the water. The eggs are about the size of those of a pigeon, of a dirty white, spotted with brown. This bird, like most of the duck tribe, is subject to variety, which has occasioned it to be divided into two or three species, to one of which has been given the name of summer teal." (Montague's *Ornithological Dictionary*, p. 508.) "Buffon, however, is sceptical on its rarity in France, and gives an account confirmatory of its remaining there throughout the summer, and breeding likewise. His accounts go to state, that they come there the beginning of March, when they distribute themselves on the coast. About April they collect a quantity of grass and rushes, and make a covered nest, the opening for the most part to the south ; in this they lay from ten to fourteen eggs, of a dirty white, and as big as those of a pullet (a proof, by the way, that it is a distinct species, as the eggs of the common teal are not larger than those of a pigeon), and sit from twenty to twenty-three days. Buffon likewise observes, that the male loses the plumage of distinction after the time of incubation is over, becoming so like the female as not to be distinguished ; but regains it after January. He adds also, that this bird cannot hear the cold, and does not frequent the northern countries." (Daniel's *Rural Sports*, p. 277.) Mr. Dunbar says, "the nest of the teal is never placed in such a situation as to rise and fall with the water. It is found on all the grassy lochs in the north, and sometimes some hundred yards from the water's edge, and at others close by ; but at all times a dry spot is selected, where it deposits ten to sixteen eggs, not much larger than a pigeon's, but longer and of a cream colour, without any spots. There is no species of duck more prolific.

2743. *Teal shooting* is however followed with much avidity, and not unfrequently by gunners who will hardly stoop to any other water shooting. It has, indeed, a certain resemblance to some of our inland shootings, which are neither common nor within the reach of every one, which may give it a charm in the eyes of fastidious shooters : and indeed it cannot be denied that it is most animating sport when pursued on the banks of a small river or even a large brook, well sheltered by bushes, and having one or two orderly spaniels (not babblers) as attendants in company with another gunner, who will take the opposite side, and thus act in concert. Both gunners and dogs being thus divided, there will be little chance, although they crouch and hide much, of passing over them. When hunted up, a teal seldom rises in the air, but usually skims along the stream, and presents a fair shot. If it cannot be got at for the interception of trees or large bushes, let one person run forward so as to circumvent his entire escape out of reach. It is not often, however, that a teal flies away altogether ; there are usually at hand some sympathetic ties of a mate or brood, which will confine him, her, or them, from straying far out of the purlieu of the locality. Avoid therefore shooting at random, and when it is seen that your shot has not taken effect, if there be two of you, let one get ahead to either take his chance of a shot, or to prevent the total departure of the bird or birds. Colonel Hawker very justly says, "If you spring a teal, he will not soar up and leave the country like a wild duck, but most probably keep along the brook like a sharp flying woodcock, and then drop suddenly down ; but you must keep your eye on the place, as he is very apt to get up again, and fly to another before he will quietly settle. He will frequently, too, swim down stream the moment after he drops ; so that if you do not cast your eye quickly that way, instead of continuing to look for him in one spot, he will probably catch sight of you and fly up, while your attention is directed to the wrong place." (P. 264.) We have reason to believe that the teal does not leave us earlier than October, and, as before observed, some remain with us altogether.

SUBJECT. 1. *Coast Shooting of Wildfowl.*

2744. *The shooting of the wildfowl* which frequent our coasts, has very long been pursued with much activity and perseverance by individuals actuated by different motives. The hardy race that employ their time in fishing during the summer, pursue the feathered tribes in the winter for the support of themselves and families ; and from their exertions our markets are partly supplied. Wildfowl shooting is also pursued with ardour by many gentlemen as a recreation ; and probably it is not too much to say, that nowhere has the practice been brought to greater perfection than on the southern coasts of our island. The practice was slowly progressing when Mr. Gilpin so ably described it ; but it has gained much since then, and has advanced with greater rapidity towards perfection since Colonel Hawker, becoming himself a zealot in the sport, lent his strong mind, his command of money, and all his energies, to the purpose of making the practice more efficient. Every year has witnessed some improvement in the gunnery employed, and in the means of producing the greatest return of the animals sought after, with the least possible

danger to the persons engaged in the pursuit of them. At the outset we shall confine ourselves to the southern coast wildfowl shooting, as depicting the *élite* of the practice. As we advance we shall notice the methods employed in other parts of our island.

2745. *Mr Gilpin's account of the wildfowl shooting on the Hampshire coast* is to the following purport:—"The coast between Hampshire and the Isle of Wight is peculiar, consisting at ebb-tide of vast muddy flats, covered with green seaweed: it affords the fowler an opportunity of practising arts perhaps not elsewhere resorted to. Fowling and fishing," says Mr. Gilpin, "are indeed on this coast commonly the employments of the same person. He who in summer with his line or net plies the shores when they are overflowed by the tide, in winter with his gun, as evening draws on, runs up in his boat among the little creeks which the tide leaves in the mudlands, and lies in patient expectation of his prey. Seafowl usually feed by night, when, in all their multitudes, they come down to graze on the savannahs of the shore. As the sonorous cloud advances (for their noise in the air resembles a pack of hounds in full cry), the attentive fowler listens which way they bend their course; perhaps he has the mortification to hear them alight at too great a distance for his gun (though of the longest barrel) to reach them; and if he cannot edge his boat round some winding creek, which it is not always in his power to do, he despairs of success that night; perhaps, however, he is more fortunate, and has the satisfaction to hear the airy noise approach nearer, till at length the host settles on some plain upon the edge of which his boat is moored: he now as silently as possible primes both his pieces anew (for he is generally double armed), and listens with all his attention. It is so dark that he can take no aim; for if he could discern the birds, they would also see him, and being extremely timorous, would seek some other pasture. Though they march with noise, they feed in silence; some indistinct noises however, if the night be still, issue from so vast a concourse; he directs his piece, therefore, towards the sound, fires at a venture, and instantly catching up his other gun, discharges it where he supposes the flock to rise on the wing. His gains for the night are now decided, and he has only to gather his harvest; he immediately puts on his mud-pattens (flat square pieces of board, which the fowler ties to his feet that he may not sink in the ooze), ignorant yet of his success, and goes groping about in the dark in quest of his booty, picking up sometimes many, and perhaps not one; so hardly does the poor fowler earn a few shillings, exposed in an open boat, during a solitary winter night, to the weather as it comes, rain, hail, or snow, on a bleak coast a league probably from the beach, and often liable, without great care, to be fixed in the mud, where he would become an inevitable prey to the returning tide. I have heard (continues Mr. Gilpin) one of these poor fellows say, he never takes a dog with him in these expeditions, because no dog could bear the cold which he is obliged to suffer; and, after all, others frequently enjoy more from his labours than himself; for the tide often throws next day, on different parts of the shore, many of the birds which he had killed, but could not find in the night."

2746. "*The danger*," says Mr. Daniel, "of attacking the wildfowl in their small boats is considerably increased when there is much ice in the river, by which they sometimes get encircled, and then can only float with the current, and are often kept two or three tides before they can extricate themselves; and their punt is but ill calculated to sustain pressure against its sides, which are not twenty inches high from the surface of the water; in this the punter by night drops down with the tide, or uses his paddles after the fowl; he knows their haunts, and takes every advantage of wind, tide, moon, &c.: his gun, which carries as much as a little cannon, is laid with the muzzle over the stern of the punt in a hitch, which regulates the line of aim: at the bottom of the punt he lies upon his belly, and gets as near the route of fowl that are upon the water as possible; when within the range of his gun, he rattles with his feet against the bottom of his punt, and when the fowl begin to spring at this unexpected sound, at that moment he pulls the trigger, and cuts a lane through their ranks; he instantly follows the direction of his shot, and gathers up those that are killed or just expiring, for very seldom he makes it answer to row after fowl that are only wounded: he then charges his gun, and drifts further down the river, in hopes of a second, third, and successive shots. By this mode a man has brought home from fourscore to a hundred wildfowl of various kinds in one night's excursion; and this will not seem an exaggerated account, when the multitudes which, in hard frosty weather, with the wind at east or north-east, haunt the Blackwater river are known."

The numbers that are seen in their day flights, and the noises of various kinds at night, are almost beyond belief: to Mr. Daniel, prepared as he was to behold amazing quantities, they exhibited far beyond what he was led to expect; and to others who have seen their throngs, the astonishment has been perhaps still greater. A punt shooter, of the name of Bowles, has been known to clear upwards of 100*l.* in a season by his gun: the wildfowl were sold to the higglers, &c. at 2*s.* a couple, one with the other: allowing his expenses to be only 30*l.*, here were 2600 birds brought home; an immense destruction, when the whole period allotted for it does not much exceed five months. Forty-two widgeons have been killed at a single shot in the daytime, and the difficulty of approaching

the great flocks of fowl in the light is tenfold. A man in whose punt the compiler was, got eighteen widgeons at one shot, and many that were crippled escaped. If in the day, or at night, the punters get a shot at the fowl at feed upon the ooze, they tie on their slashes (similar to the mud-pattens used in Hampshire), and collect the spoil. The best time for this shooting is stated to be the first or second day's thaw after a sharp frost; which we know by our own experience to be true, and likewise at such times when deep snow has long covered the ground; for the fowl are flying in every direction to dabble in the fresh water, which then appears all around inviting them. Another favourable opportunity is at the commencement of a frost, with the wind strong at east, and a sleet or snow falling; if the guns can but be kept dry, there is no complaint about using them, and the fowl in such weather always fly lower than when the atmosphere is clear.

2747. *In the day shooting upon the river below Goldanger in Essex*, near to which we ourselves resided, at half ebb the very extensive oozes of this locality become dry, leaving a surface of a long grass, upon which the wildfowl feed. The nicety required here is, so to place the punt in some of the creeks which intersect these oozes as to intercept the birds either in coming to their feed when the tide recedes, or, as Mr. Daniel has it, "when it makes so as to cover the feeding ground and drives them from the spot. It is then the shooter has full employment for an hour and a half or two hours; after which the fowl either get settled upon their feed beyond the reach of interruption, or, if driven from it by the tide, they hasten to the various decoy ponds upon that river to repose themselves." The gun proper for this shooting when followed as an amusement, has no occasion to be more than three feet four inches in the barrel. The regular shooter for profit uses one of three feet eight, which should not weigh less than twelve pounds (upon this scale the whole gun will be about eighteen pounds' weight); this quantity of iron of the above length will be as capable, or more so, of throwing shot sharp and distant as a barrel two feet longer. Should this heavy mass be objected to as cumbersome to carry, let it be remembered, that these guns are not meant to lie upon the arm, or to be carried about in the fields; the shooter is either seated in a boat, or upon a marsh; in either situation the gun does not fatigue him, since he has nothing to do but elevate it as the wildfowl fly over his head; and, after firing and charging, let it again lie beside him until fresh objects require its use. Without this ponderous substance, no man can stand the recoil of a gun that will carry a sufficient charge for doing execution at great lengths, and to kill many birds at a shot. A common fowlingpiece may do its business well, so far as its capacity extends, but it will carry very few pellets of either single or double Bristol shot; the latter is generally used by the punters for day, and the former for night shooting; the largest BB patent shot is too light for either; but even with that a gun with a common sized bore would not carry enough to do any great execution, if a rout of fowl were ever so numerous." We regret that our want of room prevents us from introducing much other interesting and instructive matter of our own made on the spot, and of much more that may be met with in Mr. Daniel's pages who resided in the vicinity of these scenes much longer than ourselves; and to his work on *Rural Sports*, vol. iii. we would refer the inquirer.

2748. *The dress of the wildfowl shooter* is an important matter, and is thus touched on by Mr. Daniel, and further detailed by the *Magnus Apollo* of the pursuit, Colonel Hawker. We will however first quote Mr. Daniel, who tells us that, "To be properly equipped for this sport in *severe* weather, it is essentially requisite to be well clothed. Flannel shirt, drawers, and additional exterior and warm garments, will not be found unpleasant to those who face the cold winds upon the marshes, or sit fixed in a punt alongside the oozes; thick yarn stockings, and over them what are termed wads by the fishermen (knit woollen stockings that come up to the middle, and however inelegant in their appearance, prove very solid comforts to the wearer); and over these double defenders of the legs, a pair of waterproof boots will also be found indispensable. A cap must be worn made of skin, instead of a hat; the fowl will not approach near the latter, and nothing so much or so soon shies them." (*Ibid.* p. 283.)

2749. *Colonel Hawker's instructions on the shooter's dress* are even more valuable and extensive. He commences with water-boots as essential in this sport, and recommends Mr. Sherb, of East Yarmouth, as the best maker of them, and directs that they should be worn over an extra pair of coarse yarn stockings. Be it noted, that boots will be much more impervious to water if kept at least half a year before they are worn, and that afterwards much attention is required to keep them from becoming too hard, which is best done by applying some good dressing to them. If they have already become hard, we ourselves recommend to apply oil of tar one part and neat's-foot oil three parts. To make them wholly impervious to wet, the colonel however directs, drying oil one pint, yellow wax two ounces, Burgundy pitch one ounce. Melt over a slow fire; and if you be particular as regards the smell arising from the mixture, add two or three drachms (we should say one drachm, for they are all dear), of any of the sweet scented essential oils, as oil of lavender, &c. To make the boots, the cap, and even the top cloak, impervious to the wet, boil any quantity of Indian rubber in four times the quantity of linseed, adding to it an ounce of

spirit of turpentine, to render it sufficiently drying. Sailors' yarn stockings, which reach almost up to the middle, should in very cold weather be put on before the boots, which therefore should be of an extra size. A very warm waistcoat, surmounted by a jacket of sheep-skin or swan-skin is necessary. Over a Welsh wig wear a leathern cap, so dressed as to be impervious to wet. Wear an Angelsea to defend the chest, and by no means, in cold or blowing weather, forget some warm cuffs, as they impart warmth to the hands as well as the wrists, as we have often had occasion to remark. For more full directions on every point connected with the equipment of the wildfowl gunner, we would recommend him to Colonel Hawker on *Shooting*, 8th ed. concluding our own hints with this remark, that the gunner's dress, be it what it may, should harmonise with the ground usually met with, and the mud of the shores; but it should be somewhat lighter.

2750. *Flight shooting.* The uninitiated in this sport, without other company than one friend, or his servant, may commence with this shooting by following these instructions:—Buy either a punt or canoe, provided you can pitch on a retired spot not followed up either by the fishermen or the rabble of the neighbourhood. In a canoe, either by rowing or shoving yourselves along between the banks of a creek, being well secured from observation, your chance of success is in the proportion of your prudence in keeping yourselves completely concealed, and in the dexterity of your manipulations when the fowl begin to arrive in small trips towards nightfall. Being provided each with a handy duck-gun, wait their arrival patiently. Now, as Colonel Hawker most descriptively expresses it, you will probably soon hear “the whistle of the approaching widgeon,” the stormy rush of the dun birds, the plaintive notes of the plover, and the shrill sounds of the approach of the wild ducks. It will offer you more chance of success should the weather be somewhat boisterous, and still more if the birds are forced to fly against the wind, which not only makes them fly low, but pretty closely together also. Be particularly careful that nothing you have on can make a glare; be still as death, yet watchful as life can make you; and as the birds in the flight up the creek lower themselves, shoot well forwards, say one or two feet, before their heads, according to the rate they fly at. If you can find, or can make any screen, one may leave the boat, and wait the flight of a trip coming on the marsh to feed; the other may wait his own chance with patience in the boat. This shooting may also be attempted, and often successfully, when alone, and likewise without a boat, provided you have the means of concealing yourself, which will in all probability happen by taking advantage of some of the deep indentations made by storms, currents, or under the banks of a brook. Wait patiently in such a situation, and you will be almost certain of success, particularly about the dusk of the evening; and if you are as great a zealot as we have been at the sport, try the grey of the morning, which we have commonly found the best time, because the least employed for this purpose.

SUBJECT. 2. *Lake and Pond Shooting.*

2751. *Lake and pond shooting.* If a lake or large pond be in the vicinity, and circumstances prevent you from taking advantage of the resources mentioned, first inspect the lake or pond that you may acquaint yourself with its safety as to paths, otherwise by going at twilight you might be lost in some gully, ravine, &c. Look well about you to observe whether feathers are spread on the sides of the ponds, as indications that the birds do visit it. If the lake or pond be supplied with a rivulet or spring, which, in all probability, will be the case, take your stand as near to it as convenience will permit, be well concealed, and be not in a hurry to fire, as we have had many occasions to complain of the impatient, when perhaps one bird only has been shot. On the contrary, if sufficient time be allowed, the birds will be coming in in small trips, and the patient gunner may then “double up” his eight or ten, and, if two guns are present, one may take the swim and the other the mount, by which we mean the first shot should be directed against those in the water, and the next against those which have taken wing. While treating of lake, mere, broad, and pond shooting, we must not locate or confine our views to any one particular spot, or we shall cripple our practice more than the birds. In the fens of Lincolnshire and Cambridgeshire this shooting is pursued with extreme ardour. The grounds there are particularly favourable to secreting the fowl, and consequently we find many of the duck tribe remain to breed there, whereas on our southern coasts, as those of Hampshire, Essex, &c. they come for food only during the severities of winter; but in the fens, meres, and broads, we repeat, they become localised and produce young, and the interesting consequences that ensue are, that in August the flapper shooting there (*i. e.* young ducks) is excellent, when on the coast nothing of the kind is met with. If the rivulets which feed many of the meres be ascended to their sources with two or three good water-dogs, and there be one on each side of the bank, and a servant to mark, the dodging teal will break away, or the mallard will rise high in the air; while the female duck will remain until her tiny brood are hid in safety, when she also essays a flight, which one of you will probably stop. In these localities the summer habits of many birds become familiar to us, but are utterly unknown to the great gunners on the southern coasts, which, however, have their own peculiar sports.

2752. For summer shooting on the meres, broads, &c. of our fenny districts, the sportsman may boast of the variety he meets with. When he extends his trips, he also may have variety, or he may purposely (as we have known to be done) confine himself to the shooting of the flappers, and those only. Here coots, dabchicks, waterrails, and some other birds, congregate and furnish the general shooter with amusement. In other districts, besides those we have mentioned, wildfowl shooting of the best kind is likewise to be met with. On the Suffolk coast we have had excellent sport; there the bittern booms his hollow tone, and the heron watches the finny tribes, while plover, curlew, &c. abound. Stretch we away into Wales, either North or South, there excellent lakes are found, abounding with fowl. On the lochs of Scotland, masculine shooting at all varieties of wild fowl may be met with; for here the eagle tribe are fishers, and surely it is no misnomer to call them *wild fowl*. Here our sea-eagle (*Albicilla*), and the osprey (*Pandion Halietus*), well known by its name of the fishing eagle, ravage the finny tribes from the Lochs of Lomond, Airc, and Marree. Here the ravenous bird may be seen hovering over a piece of water in which aquatic plants have congregated ducks, coots, &c. &c., which, by their numbers and variety, offer him the choice of prey. Next see the marauder, winding his way towards his nest in yonder craggy cliff; but mark! the quick-eyed gunner has brought him down.

Ireland, as well as England, Wales, and Scotland, presents the sportsman with excellent



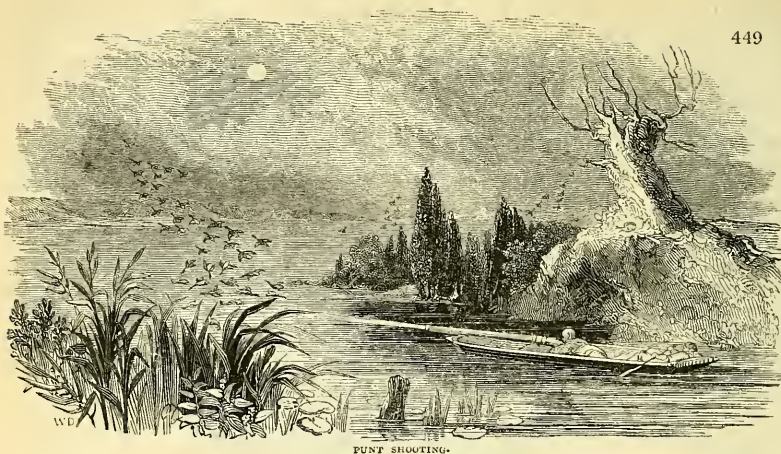
WILD-FOWL SHOOTING.

wildfowl shooting on the banks of its rivers, its lakes, and its shores generally. When we were in that country the principal oozes were at a distance, so we did not visit them: but as we were in constant communication with native sportsmen, we learned much of the practices of this extensive and intrinsically sporting country, where not to be *au fait* in all rural sports was a disgrace.

2753. *Wildfowl shooting is also pursued with ardour in India*, as well by the natives as the visitors. "The English," says Pennant, "send out their servants as well as Indians to shoot these birds on their passage. It is in vain to follow them; they therefore form a row of huts made of boughs, at musket-shot distance from each other, and place them in a line across the parts of the vast marshes of the country where the fowl are expected to pass. Each stand is occupied by a single person; these, on the approach of the birds, mimic their *cackle* so well that they will answer, wheel, and come nearer the hovel. The sportsman keeps motionless and on his knees, with his gun cocked, and never fires till he has seen the eyes of the wildfowl. He fires as they are going from him; then picks up another gun that lies by him, and discharges that. The fowl killed he sets up on sticks, as if alive, to decoy others; he also makes artificial birds for the same purpose." Every sort of wildfowl has a different call, but the Indians are admirable in their imitation of each.

SUBSECT. 3. *Hampshire Coast Punt Shooting.*

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2754. *Hampshire coast shooting with a launching punt (fig. 449.).* It is probable that this shooting, and the management of a punt, have been brought to a greater perfection here than in any other part, and that principally by the exertions of one individual. It is not too much to say, that Colonel Hawker was the first punt gunner in Great Britain. The Hampshire fishermen, who are equally expert at wildfowl shooting, are acknowledged to be the most dexterous and adventurous of their kind; and when the fowls were as heretofore plentiful, and the shores less invaded by idlers, they proved themselves the most successful of any of the same calling. Indeed, had they been as prudent as they were successful, they might each have laid by "sufficient for a rainy day." But "light come, light go," was their motto, and their practice also; and now that the birds are more scarce, and shooters numerous, they sigh over their lost avocations. The *take* now made would be still less than it is, had not Colonel Hawker introduced many improvements, both in the vessels employed and in the practice of wildfowl gunnery: his ardour in the sport, and his mind being devoted to the entire subject, have at once rendered the manipulation more systematic, and the vessels and other means employed more effective. The most simple among the vessels used for wildfowl shooting is a punt, extremely light, but remarkably well put together. Those now employed to traverse the great oozes on the Hampshire coast are built round at the stern, an elm plank of only a moderate thickness forming the bottom. In length they average about fourteen feet, and in breadth about fifteen inches, ten inches of height increasing to two feet six inches at the gunwales. Colonel Hawker recommends a solid block of elm, as best adapted to form the knee of the vessel, which is fixed firmly to the bottom.

2755. *A gun of fifty pounds weight,* Colonel Hawker thinks, answers the purpose here intended best: the old heavy gun, of seventy or eighty pounds, rendered the punt immovable almost when fouled on grass or winkles, which are shells strewed over the oozes in myriads. The sportsman in such a punt rows with his back to the gun until he sees the fowl, when he turns on his face and works himself along with a kind of prong, weighted to catch the ground. When there is so much water that the shoving-pole cannot readily reach the ground, two paddles are made use of to push the adventurer forward. Having given these instructions in justice to ourselves, we now, in equal justice to the reader, recommend him, if he feels the smallest inclination to become fully initiated in this sport, to immediately supply himself with Colonel Hawker's work, eighth edition, which is actually essential to any one wishing to become a wildfowl pursuer, were it even at double or treble the price it costs. In this book may be seen, plans and elevations almost endless, and every one extremely well executed, exhibiting each variety of vessel that is used, from that under the denomination of the *light punt*, just noticed, to one of a size and substance to carry two staunch guns of seventy or eighty pounds. To facilitate the gunner when obliged to walk over the oozes, mud-pattens or mud-boards are used, and may be seen figured, together with the punt and the leaded stick and paddles, at p. 350. of the colonel's work, eighth edition. It is however worthy of remark, that this method of reaching wildfowl by means of a launching punt, had an unfortunate effect on the birds by driving them in a great measure from the Lynnington shores to Poole Harbour and other localities, where the mud will not admit of "launching." Several other modifications of the launching punt, also in use on the coasts, appear; for figures of which, and explicit directions with regard to the proper

methods of using them, we would refer the inquirer to the same work, premising for his information, as regards these very necessary vessels, that the principal varieties, and the most important among them, are the launching-sledge, the Sussex mud-boat, the Poole canoe, and the new light punt which is still more highly praised by our director-general than the others. To these figures and descriptions are appended important general instructions for the practice of sea-coast shooting afloat; on which subject, having already despatched, we shall only add a few other practical hints from the colonel's code, in aid of our own matter which is to follow.

2756. *Shore shooting of curlews, plovers, &c. &c.* We have already given a description of a number of interesting birds, which, it may be said, are claimed both by the sea and the land; and we have given practical directions from our own shooting, how to bring them to bag. Now, as these birds begin to move from their summer quarters (from whence we have already been instructing the sportsman how to disturb them for his amusement and his profit), they assemble towards the latter part of October on the oozes and mud shores, some weeks before the great flights of the birds, which constitute what we understand by the term wildfowl, or the web footed tribes arrive. Consequently there would be, were it not for them, a vacancy and a stop to the sport of the shooting zealot, particularly if he reside near the coast. In such case we would recommend that Colonel Hawker's ingenious method should be adopted. We however shall first premise, that the olden plan of pursuing them on a point at high water, or to use his own words, "on the edge of the mud, just as the tide begins to fall," does not succeed so well as formerly; for, as he humourously observes, "no sooner does the fall arrive than there is scarcely a point to be seen but what is garnished with the shock-head of some shore-popper or other." Since population has increased to the degree it has, and honest industry has given place to a love of pleasure and excitement; since that time, on the southern coast at the ebb of the tide the ground is generally occupied by shooters of the class we hint at; and consequently all attraction is lost to the gentleman gunner. On the Hampshire coast we have been describing, it is well known that at low water the oozes or mud shores are so flat, that even the curlews are washed off their legs by the flowing tide, before any regular shooter with a punt can find water to get to them. To afford his readers amusement, even in this exigence, this indefatigable sportsman says, "The plan I adopted a few seasons ago, was to make an island in the middle of the ooze where I was sure of the first shot, unless any one was there whose punt drew less water than mine, which happened not to be the case.

"The way to make an island that will stand the overwhelming south-westers, is this:—go at low water and drive strong poles, from nine to twelve feet long, into the mud, at about the interval usual for hedge-stakes, till they stand no more than two or three feet in height. Then make a hedge to inclose as much space as you may wish your gun to sweep, fill in your fence with faggots, well lashed on; and then cover them with mud, seaweed, and light gravel, taking care to leave a smooth up-hill surface, which your gun will play well upon, and without leaving any protuberance that would protect the birds from the shot. After your island has stood a few heavy gales, you will then see whether you have to replenish it or not; and when all appears to stand well, go and cut off your stakes level with the island, as they might otherwise wholly alarm the birds, or partly protect them from your shot. Let your island be completed a few weeks before the autumnal passage of the birds, and I'll warrant that the first heavy gale and spring tide will drive to it some home-bred oxbirds, if not curlews. These, provided they are not driven away by some premature tyro of a gunner, will bring down the birds of passage which migrate to the coast; so that, with the first *good tide* and very *high wind*, you may expect to see—not one particle of your island—but only the rug or carpet, as it were, which is formed by the innumerable birds that cover it." (*Instruction to Young Sportsmen*, eighth edition, p. 441.)

SECT. V. *The Pigeon, and its Natural History.*

2757. *Pigeons, both tame and wild*, have more claims on our attention than are apparent at first sight. So extensive is the distribution of this genus, that it is found in all the warm and temperate regions of the globe; and so numerous are the species which compose it as to exceed more than a hundred. As an article of commerce their worth is considerable, and as messengers they have conferred important benefits, by reaching distant destinations when the telegraph even was useless. The Society of Amateurs at Antwerp sent ninety carriers to Paris to fly for a prize. They were started from thence at seven in the morning, and by noon of the same day thirteen of them had reached home. This instinctive aptitude for domesticity has always marked them. Anacreon has immortalised them in his odes as the bearers of epistles. Taurosthenes sent to his father by these means the glad tidings of his success in the Olympic Games on the day it occurred. Pliny notices the communications kept up by pigeons at the siege of Modena. Ariosto (canto 15.) makes the Castellan di Damiat spread the news of Orillo's death all over Egypt. Sir John Maundeville, in the reigns of our second and third Edward, especially notices the value of the *colverees* in

China, for the transmission of letters on important occasions. Pigeons are also important in a commercial point of view, many thousand dozens being annually bred to supply the markets, and many to gratify the pigeon shooters' wants. Under this view, were there no other, the natural history of these popular and universally distributed birds must prove interesting to the lover of Nature as well as the sportsman. This family has more numerous varieties than most others, and no one is more extensively diffused than this, nor has any excited more inquiry, or encouraged more disputation. Among the best authorities vast differences have arisen as to their systematic placing among the winged tribes. Aristotle very early noticed five if not six varieties in the pigeon group. Pliny has floundered about them and their varieties until, getting lost, he contents himself with collecting a history of their habits. Belon notices *ramiers*, *tourterelles*, *bisets*, *pigeons-fuyards*, and *pigeons elect*, among the birds, "qu'on trouve viander indifféremment en tous lieux," placing them between the wry neck and the blue thrush. Gesner arranged them between the gallinaceous birds and the bustards. It would however be endless to enumerate the different niches they have occupied in the arrangements of our most eminent ornithologists, which in our opinion tends to heighten their real importance, by showing how intimate and extensive are their connections. Le Vaillant has been, however, complimented as the first who arranged them into three well defined sections: the first contained *colombes*, *ramiers*, and *tourterelles*; the second the *columbars*; and the third the *colombi-gallines*. Linnæus placed them among the *passeres*, or sparrows; and his reason for so doing was the great analogy between them,—both pair in the season of love, both work jointly in making the nest, and take their turns in sitting. To this placing we cannot bow, the gallinaceous birds are almost all polygamous, a habit unknown among pigeons. The first lay many eggs, the pigeons usually only two; but a more essential difference in the pigeon from the gallinaceous birds is, that its posterior toe is articulated at the bottom of the tarsus, on the same plane as the anterior toes. (See our figures of the *ringdove* and *stockdove*, p. 928. 930.) In the gallinaceous birds, on the contrary, the hind toe is articulated much higher than the plane of the other toes. At the present time, however, our highest authorities incline with Cuvier and Illiger, to consider the pigeon tribe as a sub-division of the gallinaceous kind. "The family of *Columbida*," says Mr. Vigors (*Linn. Trans.* xiv. 410.), alternately arranged by systematic writers among the perching and gallinaceous orders, and not unfrequently grouped as a separate order between the two, at once indicates where the point of junction exists between them. These birds, although we have the high authority of Linnæus for uniting them with that division of our perchers, which form his *passeres*, I do not hesitate in arranging, conformably to the opinion of MM. Cuvier and Illiger, as a sub-division of the gallinaceous birds."

SUBJECT. 1. Pigeon-match Shooting.

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PIGEON SHOOTING.

2758. We have been now so long on the waters, or near them, that we are fearful our readers will have thought that we meant to drown ourselves, or them, or both, which latter, if forced to either alternative, would be the best, as we should be tolerably certain of dying in good company. However, it is probable that both parties would prefer to see a little more sporting. The cut introduced above (*fig. 450.*) is intended to represent a match of pigeon shooting at the Red House, Battersea, which has long been known as a place of resort for sportsmen. Previously to its acquiring that character, the Old Hats at Ealing was a popular rendezvous: the change was certainly a good one, from thence to the Red House, which is more conveniently situated, as being nearer to London. The zealots in pigeon shooting, of which there are many among the wealthy and influential, are loud in praise of this sport, and consider it as the perfection of the art of shooting flying. Nor is it possible to avoid being

struck with admiration at the certitude of the eye, and the sympathetic readiness of the hand to follow its guidance in arresting the progress of flight in a bird so notoriously rapid in its motions as a healthy pigeon when flying for its life. But when we are told, that to become a ready and certain shot at game of all kinds, we must commence with pigeon shooting, and that, having gained a certain degree of proficiency in that practice, success in the other varieties follows as a matter of course, we dissent, and we do it from much inquiry and much observation. We are more inclined to think with Mr. Daniel, that "shooting of pigeons and of game is so widely different, that a person may almost always strike his bird from the box, that scarcely ever makes shift to hit it when rising from the bush, unless a pointer ascertains to an inch from what spot he may expect the bird to spring. No method is so advantageous in learning to shoot well as acquiring it by practising it at game: the pigeon from the trap glides off in silence, and not a nerve is discomposed by the smallest alarm; but in the field, where the partridge or pheasant rises with all the vigour of an animal exerting his powers to preserve life and liberty, the consequent sound of their pinions in their ascent into the air, which is always attended with considerable noise, will perhaps create more of that trepidation (which, when possessed even in a trifling degree, effectually deters from steadiness in shooting), than if the shooter had never accustomed himself to fire at objects whose flight is so dissimilar. Many young shooters exercise their skill at swallows, swifts, and martins; but the flight of these is so irregular, and unlike that of every other bird which the sportsman pursues, that even a certainty of killing them (which, by the way, a despicable bad shot may acquire a knack of doing by seizing a particular moment when they are just upon the turn, and are for an instant stationary), does not at all forward their dexterity in bringing down any other species of game." (*Rural Sports*, vol. iii. p. 363.) Mr. Daniel also observes on it, that "as a mode of shooting to bet large sums of money upon pigeon-match shooting is perhaps the least objectionable, since every shooter has an equal chance as to the distance from whence the bird is sprung; but it certainly is not exactly the kind of shooting that a sportsman will ever try or fancy as an amusement." (*Ibid.* p. 362.) A decided favourer of this sport observes, that "whatever degree of utility may otherwise attach to it, pigeon shooting has the further merit of annually delivering some hundreds of miserable birds from the clutches of metropolitan blackguard fanciers by whom they are too often kept in an unnatural and torturing state of confinement. Indeed, their carriage in sacks to the place of execution is no mitigation of their tortures, yet happy are those which there find their *quietus*. Farther, it is an Englishman's sport, since it is a free one, in which a man may exercise his gun although of the unprivileged class." (*Sporting Annals*, p. 237.)

2759. *Of the exact time when pigeon-match shooting came into vogue* we have no authentic records, but we can distinctly trace it to more than half a century back. The *Old Sporting Magazine* for Feb. 1793, names it as in general practice at that time; and as the account given of the mode of conducting it then assimilates much with that pursued now, it may not be uninteresting to the reader to have it laid before him:—"The great celebrity of this sport, in which some of the first shots in England are so frequently engaged, encourages us to communicate an account of its fashionable influence and increasing prevalence, as a subject entitled to a place in our sporting detail. Matches coming under this denomination are of two kinds, — the first are supported by private subscription, amongst such gentlemen only as are members of their distinct and separate clubs. Others of an inferior complexion come on, or take place, by public contribution from candidates of every description, and are generally excited and brought about by the landlords of inns, who offer prizes of pieces of plate, purses of sovereigns, &c. &c. to be shot for. This practice of pigeon-match shooting is also common in almost every part of the kingdom, but in none is it so frequently repeated or so fashionably followed as in and around London. In the counties of Buckinghamshire, Berkshire, Hampshire, and Surrey, it is patronised, where at this season of the year it is in perpetual succession at one spot or another. Having proceeded thus far in our general account, it becomes us now to enter on such a description of the sport as may render it perfectly easy of comprehension to those who have never had an opportunity to be present at so earnest a struggle for superiority. In direct conformity with propriety, we advert first to the match, as it is generally made and decided between a given number of gentlemen from different clubs opposed to each other, or members of the same club, when, by tossing up for the first choice, they continue to choose in rotation till the party is completely formed, which may be contracted or extended to any number required for the convenience of the company intending to shoot. The match thus made, and the names of the opponents arranged upon paper by the arbiter, the sport begins in the following way: —

2760. "Several dozens of pigeons having been provided for the purpose are disposed in baskets behind the company, there to wait the destructive crisis, the 'deadly level,' that dooms them to instant death, or gives them liberty. A shallow box of about a foot long and eight or ten inches wide, is sunk in the ground parallel with the surface, and just twenty-one yards from the footmark at which each gunner is bound to take his aim. The box has a sliding lid, to which is affixed a string held by one appointed to that office, who

is placed next the person going to shoot, from whom he takes the word of command for drawing the string whenever he is ready to take his aim, another pigeon being so expeditiously placed in the box, for the succeeding shot stands ready (by the runners that furnish the pigeons), that ten, twelve, or fifteen dozen of pigeons are deposited in the box, flown, and shot at in much less time than it is possible to conceive. The gunner is not permitted to put his gun to his shoulder till the bird is on wing; and the bird must fall within one hundred yards of the box, or is deemed a lost shot. During this rapid succession (one of each side shooting alternately), the arbiter is employed in pencilling opposite to each name the success of every individual, by A 1, or A 0; this, at the end of the match, denotes the superiority, by demonstrating which party has killed most pigeons at the least number of shots. Exclusive of the general betting upon the match, there is a variety amongst individuals — the shots of some against others, and the field betting of the bird against the gun, as fancy may prompt or the reputation of the gunner dictate. He that kills most pigeons in the match, at an equal number of shots with the rest, is by such pre-eminence the *captain* of the day, stands elected as chairman for the meeting, and does the offices of the table accordingly.

2761. "*Matches of an inferior description* are still more numerous, and generally come under the denomination of an help-ale, or make-feast, at the instigation of those industrious ! liberal ! landlords who advertise ! three pieces of plate to be given to the three best shots ! but at the moment of entering the lists, it becomes a collateral part of the contract, that each adventurer is to contribute his proportion towards the gifts of plate, to pay for his pigeons, and to dine at the ordinary. These matters properly adjusted, the shooting is carried on precisely in the manner before described, with this exception only, that here every individual shoots for himself alone, without any connection with party. The candidate killing most pigeons, at the least number of shots, becomes entitled to the piece of plate highest in value, and so in proportion : but in so great a number of candidates there is frequently an equality of success ; in such cases they are called ties, and are shot off at remaining pigeons till the superiority is ascertained, and the victor proclaimed. This done, the day concludes with the same degree of festivity and superabundance as before described, but in a style of inferiority necessarily regulated by the pecuniary resources of the parties concerned. Looking however to its attraction as a matter of sport, little or nothing can be said in its favour when put in competition with the more noble and manly enjoyment of the sports of the field. The liberal mind feels a temporary repugnance at the idea of first confining, and then liberating from that confinement, hundreds of domestic animals doomed to instant death, with a very slender probability in their favour, when a moderate shot will bring down fourteen or fifteen, and some nineteen out of twenty. This picture affords but an indifferent idea of the sportsman's humanity who indulges largely in this species of gratification. And further, we presume to observe, for the information of the inexperienced, that it is the most infatuating and expensive amusement the juvenile sportsman can possibly engage in ; for one day very seldom terminates without the appointment of a second ; one extravagance as constantly engenders another, to the utter exclusion of economy, which is upon all similar occasions generally laughed out of countenance. Experience has also convinced us, that eight, nine, or ten pounds for pigeons, in addition to the bill of fashionable exorbitancies for the day (amounting to the inconsiderable reckoning of two or three guineas each), has sent many a pigeon shooter to his bed, and awakened him to the pillow of reflection."

2762. *The Red House* does not confine its amusements to such fly-away subjects as pigeons, but boasts also some heavier and equally entertaining scenes on the waters ; for rowing matches are frequently got up here. It also possesses other advantages from its easily accessible situation, and offering the choice to gentlemen, either of going by water or land to the inclosure. "The above matches, of each kind, not only produce some excellent dinners provided by 'mine host' in first-rate style, but some capital convivial evenings likewise, which exhibit a very fine feature of the *spirit* and *game* which generally attaches to meetings of a sporting description, and more especially over 'the gaily circling glass !'" (*Pierce Egan's Book of Sports*, p. 372.) There are likewise some other places of resort, where pigeon-match shooting is practised. Chalk Farm used to exhibit a very respectable assemblage of pigeon-match shooters ; but, *sic transit gloria mundi* — the North Western railway, and the modern villas and terraces bordering its route, have destroyed all the rurality and much of the sporting for which it was formerly renowned. Still, some pigeon and sparrow-shooting is carried on there. We shall in a subsequent page name some other places where the same entertainment is afforded.

2763. *Gold Cups* are not unfrequently shot for among the higher order of pigeon-match shooters, and in some instances one and even two thousand sovereigns are said to have been staked on a match ; but these, like all pecuniary transactions in the present day, admit of considerable allowance being made for exaggeration. Undoubtedly there used to be matches made for large sums at the Red House ; but these were in the palmier, more exclusive, days of pigeon-shooting, such as is described in the following account. On Mon-

day 30th of June, 1829, the following we might almost say unparalleled shooting of pigeons took place in a sweepstakes made on the occasion of Captain Ross leaving town for the season. The parties were Lord Ranelagh, Captain Ross, Messrs. Osbaldeston, Grant, and Shoubridge; Lord R. and Mr. Grant receiving four dead birds in advance. The match came off a tie at the fifteenth double shot, between Captain Ross and Mr. Shoubridge. Captain R. and Mr. S. then shot the tie off. Capt. R. led, and killed his three double shots in succession; Mr. S. followed with the same success. Capt. R. in his next double shot missed one bird, and Mr. S. killed both his, and was declared the winner. This was considered by all amateurs present the best shooting ever witnessed, Mr. S. having killed the unprecedented number of ten double shots out of the last eleven, and the first bird of the eleventh, making twenty-one birds out of twenty-two. 1000*l.* to 100*l.* was offered, that no person can be produced to excel this performance. In the next year the Red House Inclosure was again honoured with the company of the principal performers of the last match to engage in another. These were Hon. Colonel Anson, Captain Ross, Messrs. Osbaldeston, and Mr. Shoubridge. At the commencement of the shooting the Hon. Col. Anson and Mr. Osbaldeston were the favourites, at five to four. Captain Ross made some of the most surprising double shots ever made on the ground; the distance was twenty yards with the five traps, at twenty-five double shots each. The betting was five to one, both birds being killed against both being missed. At the conclusion the numbers were, — Mr. Shoubridge, twenty-seven; Capt. Ross, twenty-six; Hon. Col. Anson, twenty-five; Mr. Osbaldeston, twenty-four. The betting on the next day's shooting was in favour of the Hon. Col. Anson. The match was fired with shot. Two matches were then shot by Capt. Ross and Mr. Osbaldeston, at thirty yards, with the five traps, at twelve birds each. Capt. Ross was the winner of both matches, having killed ten out of twelve. The matches were shot with Eley's improved cartridges, the shooting of which was most excellent, and gave to the gentlemen great satisfaction. Did our limits permit, we might add to these other extraordinary performances of a like kind, but as they do not, we recommend the reader for a more full detail to that amusing olio, known as *Pierce Egan's Book of Sports*, from which we have drawn some of our notices. Our memoranda also notice the shooting exploit of a gentleman of Nottingham, whose name we are not in possession of. He was to shoot at and hit penny-pieces to the number of twelve, and small stones six, which were to be thrown up successively, which match he accomplished in this manner: —

1st shot, penny-piece hit with	7 corns.
2d - - - - -	17
3d - - - - -	13
4th - - - - -	35
5th - - - - -	17
6th - - - - -	9
7th - - - - -	7
8th - - - - -	2
9th - - - - -	21
10th - - - - -	9
11th - - - - -	7

12th shot, penny-piece hit with	13 corns.
13th - halfpenny - - -	1
14th - - - - -	7
15th - small stone - -	6
16th - - - - -	9
17th - - - - -	12
18th - - - - -	10
19th - - - - -	13
20th - - - - -	8

Averaging eleven corns; total 223

To this expert marksman's exploits we would append those of the celebrated brothers, Richard and Edward Toomer, who, with their rifles and a single ball, killed eight pigeons out of twelve, shooting alternately; and one of the pigeons that did not drop, had a leg carried off by the ball. They likewise with a single ball struck twice, out of four shots, a cricket-ball thrown into the air; and Richard Toomer, at a cricket-match near Hartford Bridge, Hants, his gun being loaded with *shot*, struck the ball *twelve* successive times, when bowled by Harris, known as one of the sharpest bowlers in England; this Toomer deemed one of his best and most difficult performances. Richard Toomer is the person whom we have already named, as having trained a sow to hunt and stand to game. So thoroughly was shooting, both with gun and pistols, reduced to a science by the two brothers, that numbers of gentlemen became their pupils, and received instruction from them; nor was their knowledge confined merely to the use and effect of the gun; in hunting and fishing they were equally well experienced. To Mr. Richard Toomer's activity and resolution in securing some of the most desperate deer-stealers and poachers that infested the New Forest, the noblemen and gentlemen concerned in the preservation of the deer and game in that district can bear abundant testimony.

It may not be irrelevant to state, that the exploits which Mr. Richard Toomer performed in shooting with such apparent ease, soon convinced the persons who saw them that they were done methodically; and this was completely ascertained by his frequently suffering himself to be blinded with a double handkerchief over his eyes, after having taken his aim, and then to fire and hit a small object. Sometime previous to his death, he went to Moyles Court, near Kingwood, for a day's rook shooting; he made some trifling bet with Mr. Mist, that he killed more birds with his rifle and a single ball than Mr. Mist did with his fowling-piece and shot. The number of shots was limited to twenty. Mr. T. killed every shot, Mr. M. nineteen, who expressed his surprise, at the event, remarking that, as the trees were very lofty, Mr. Toomer's eyesight must be superior to that of others. Mr. T.'s answer

was, "I will convince you, my friend, there is not such wonderful eyesight required, and that what you have seen is not so difficult as you imagine:" he selected a rook, levelled his rifle, and then desired Mr. Mist to tie a handkerchief over his eyes, so that he was in perfect darkness: after this was done he fired, and brought down the bird; he reloaded, and repeated this a second time with the same effect, to the astonishment of many spectators. Mr. T. was satisfied that birds might be readily killed flying, with a single ball, if the lock to the gun was not too large, and the spring so tempered, that the mainspring and that of the hammer acted in concert, and that the fire was emitted freely, and the explosion of course instantaneous at the stroke of the flint. In improving gunpowder as to its quickness in firing, Mr. Toomer, after visiting different powder mills, and trying experiments in various parts of the process whilst making, had completely succeeded: the secret now remains in the family, and a considerable advantage is made of the sale of the powder so prepared. But it was not *fire-arms exclusively* that Mr. Toomer was so expertly versed in: the air-gun had from him received many improvements: he has killed fifty brace of bucks in one season with his air-gun, and was busied in adding to its further utility at the time when he died, which was at the early age of thirty-seven years, extremely lamented by all who knew him. (*Rural Sports*, vol. iii. p. 373.) Having ourselves lived in the country where the exploits of these celebrated marksmen were exhibited, and knowing that the accounts, surprising as they appear, are correctly stated, we are prompted to thus enlarge our detail. We presume that we hardly need to state, that the blue rock pigeon is that usually employed in this sport as the most quick and steady flyer.

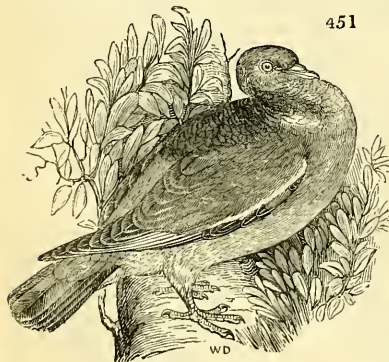
2764. *Pigeon-match shooting*, as being pursued throughout all the year, gives it favour in the eyes of many. Neither time, season, nor locality, impedes it. It is practised in every part of the kingdom, but evidently thrives best in the neighbourhood of the metropolis and its circumjacent districts. Several of these present spots appropriated to the sport. Besides that of Battersea, the principal, meetings are also held at Brompton, Hornsey Wood House, the Edinburgh Castle, Stepney, Wade's Mill, and in many other localities of less note. The rules and regulations of the practice of pigeon-match shooting necessarily vary with the views of, and with the agreements made between, the contending parties. Sometimes a sweepstakes is entered into: occasionally matches are advertised as open to all England: in other instances the matches are confined to be shot between established members of a club, where now and then the shooters are hand-capped by distance. Sometimes single, and sometimes double, guns are employed, according to the agreement previously entered into. The weight of shot to be used is arranged between the parties before the match commences: two ounces may be considered as the medium. The distance also is regulated in some matches by the calibre of the gun used.

2765. *Sparrow shooting matches* are also occasionally made; of late they have been frequent, and are advertised in *Bell's Life in London*. Chalk Farm, Hornsey Wood, and numerous other localities, have habitually been the scenes of the destruction of such small game. Leeds, Birmingham, Manchester, and almost all large towns, have their shooting-grounds, generally the property of the licensed victuallers, where the feathered tribe suffer an apparently exterminating slaughter.

SUBJECT. 2. *Wild Pigeons.*

2766. *The ringdove, cushat or queest* (*Columba Palumbus* Linn.), is the most popular bird among sportsmen of the dove varieties. Colonel Montague says of it, that "it

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THE RINGDOVE.

p 422.) Its nest, as every schoolboy knows, is rudely constructed. This bird is very

weighs about twenty-two ounces; length eighteen inches. The bill yellowish; the head, coverts of the wings, and scapulars, are of a deep bluish ash colour; the neck and breast vinaceous, beautifully glossed with green and copper colour, changeable in different lights; on each side of the neck is a large patch of glossy white, which almost joins behind; the back and tail ash colour, the latter black at the end; vent and thighs white, tinged with ash colour; the bastard-wing almost black, behind which a few of the coverts are white, forming a line down to the greater quills, which are dusky edged with white; the legs are feathered much below the knee, which, with the feet, are of a purplish red. There is little or no distinction in the plumage of the sexes; but the female is not quite so large. (*Ornithological Dictionary*,

commonly known by name as the *wood-pigeon*, and may be described as the largest of the tribe; and further, as being as good to eat as it is difficult to approach. Many an one, however, have we in our youth brought down from the beech and oak trees of the large woods both of Herts and Bucks. The greater part emigrate at the beginning of winter, and return in the spring (some deny this; we do not, but on the contrary believe it); at which season they commence building their nests, usually at a considerable elevation, in the beech, oak, and other trees. Sixty or seventy years ago their numbers were almost incalculable, and their emigrations more confined, as their persecutions were less; but an increased population, a lawless thirst for pleasure and plunder, together with a felling of the large woods they used to rest in, have combined to drive great numbers away, never to return. Of late years, since the vast increase of turnips, that vegetable has furnished a great part of their support in hard weather; and the holes they pick in these roots are supposed to greatly damage the crop. From the turnips their flesh contracts a rancidness which occasions them at this season to be rejected by nicer epicures; but by filling the inside of the bird with bread, much of the disagreeable taste will be removed. Wood-pigeons are excellent guards against poachers; for the cabal they make effectually alarms



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WOOD-PIGEON SHOOTING.

the keepers, and prevents the poachers from using their air-guns, usually employed against the pheasants.

2767. *Woodpigeon shooting* is still practised, but with little success in comparison with that we have noted as common formerly. A party examine a wood, and by the marks of the meetings of the birds they discover the spot of their usual roosting. The party have now to conceal themselves here and there, and to do it dexterously, exactly in the rear of the flight; and as one and all roost with their heads towards the wind, so it prevents either any rustling or any emanations from the gunners from reaching the birds, who are thus by the moon's light picked off with a moderate certainty; and if a double gun be used, a second effective shot may often be made. The sport can also be followed during the day with success, provided a turnip field be near the favourite wood they perch in. Behind some hedge, or behind an artificial hide, between the turnip field and their roosting place, one or two persons may secrete themselves, and probably obtain several shots at the birds, either as they go to or come from the turnips. On the nest of this bird Grahame says,

"So rudely is it formed,
That oft the simple boy, who counts the hours
By blowing off the dandelion flowers,
Mistakes the witch knots for the cushat's nest."

2768. *The stockdove* (*Columba Œnas* Linn., fig. 453.). We approach this subject not without fear that we are in error with regard to its correct denomination. If we really do err, our only consolation is, that we do it in good company; for this bird, or at least his variety of denominations, has been a stumbling-block to numbers. Bewick calls it the wild pigeon; Colonel Montague, the rockdove or rockier; and he remarks on it, that "Ornithologists seem to differ in opinion concerning the rock and the stockpigeon, though it appears almost impossible to conceive them a distinct species. In those described under such names there seems to be so much similitude, except what may be expected from a species half reclaimed, and frequently returning to their natural wild habits again, that we cannot but consider them as one and the same species." (*Ornithological Dictionary*, p. 425.) Bewick partaking of this uncertainty says, the stockdove, rockpigeon, and woodpigeon, with some small differences, may be included under the same denomination. We certainly think the same with regard to the rock and stockdove, but we cannot so readily yield our credence to the assimilation of the woodpigeon with our domestic pigeons, because no efforts made could ever produce any sexual intercourse between them, although the woodpigeon has been known to roost with them. His determinate size also, from which we have never seen him vary, is contradictory to such a presumption. Of the shooting of these birds we have little to say, as we have not seen them in congregated multitudes, except when they were preparing to emigrate. We have occasionally pulled one down when winging his way from wood to wood; and we can assure our readers that he likewise makes very toothsome food.



STOCK-DOVE.

2769. *The turtledove* is an elegant minikin pigeon, which visits us in the spring, and migrates in September. As there is much reason to believe that these birds visit us principally to breed in our woods and groves, we would plead for them, not only by words but by example, for many a one has passed us in the fields quite within shot without our interference; and as we can assure the reader that we never did either hit or shoot at one, so we do think we may request the same forbearance from him. It is but a morsel, weighing only six ounces, is of very pleasing colours in its plumage, particularly the male. It is rather circumscribed in its localisation; we have frequently seen it in the Isle of Wight. In Kent they are also said to be more plentiful than in any other county, where they are observed to visit the pea-fields very assiduously. They have also been seen in small flocks in Romney Marsh; but this must have been either soon after their arrival or a little before their departure. Turtledoves incubate in the deep recesses of woods, and make a true pigeon's nest, circular in form, but very loosely put together in material. The largest and longest twigs are laid as a foundation, and upon them others of smaller dimensions; in this nest are laid two white eggs, which being hatched, the young are assiduously attended by the parent birds. This pigeon, in common with others of this vast family, is able to supply, if not lactiferously, at least a very nutritious secretion from glands near the crop, with which it feeds its young. This secretion, as we have elsewhere observed, renders the supposed wittiness of *sending an unlucky wight for pigeon's milk*, a self-stultification on the part of the sender.

"A variety of the common turtle has been described by the name of the spotted necked turtledove (*Lath. Syn.* vol. iv. p. 645. pl. 40. *a.*; *Ind. Orn.* vol. ii. p. 606. pl. 47. *β.*) The difference consists in the whole side of the neck being black, and instead of those feathers being tipped with white, there is a round spot of white on each, very near the end. Dr. Latham says this bird was shot in Buckinghamshire, and that he observed one of these amongst some birds that came by the last expedition to the South Seas; but as it was in a parcel wherein were some which belonged to the Cape of Good Hope, it is possible that this might come from that place." (*Ornithological Dictionary*, p. 524.) Temminck says, "The bastard produce of the common wild turtle (*Turtur communis*) with the turtle of the aviary (*Turtur Risorius*), has been proved by frequent experiments to be barren, although the two species from whence it originates appear to be closely allied, and a mixed breed is easily procured; and such, we have no hesitation in saying, would be the event, if a cross could be obtained between the common pigeon and the ringpigeon, the woodpigeon, or any other species." These observations are well worthy of attention. The assertion respecting the bastard produce of the turtles made above, is corroborated by MM. Boitard and Corbié, in their *History of the Pigeons de Volière*. (*Penny Cyclopædia*, vol. vii. p. 372.)

SUBJECT. 3. *Rook Shooting.*

ROOK SHOOTING.

2770. *Rook shooting* (fig. 454.), if it be out of the pale of *field sports*, is yet strictly within that of *rural sports*; and if the cynic should tell us that we cannot call it the shooting of game, we reply that it is nevertheless a very pleasant game to shoot at. The rook Bewick describes as being about the size of the crow; which latter bird, however, wants much of that metallic lustre that shines on the plumage of the rook. A scabrous rough whitish skin extends from the root of the bill and nostrils as far as the eyes; and this marking is accounted for, from their habit of sinking their bills deep in the ground, in search of the erucæ of the chafer and other colcopterous insects, which destroy the roots of corn, grasses, &c. Thus, where extensive rookeries have been destroyed, it has happened that the next year the increase of the hedgechafer, or, as some call it, the cockchafer, has been so abundant (as happened in Ireland in the year 1747), that almost a famine was the consequence. It has been thought that the scabrous marking above the bill is not natural, but the effect only of the friction in digging it into the ground. We will, however, not venture peremptorily to deny, that were any mode to be devised by the rook to feed itself, that the scabrous mark might in such case not become conspicuous; but this we can affirm, that some tame rooks brought up from the nest, and artificially fed by hand, still exhibited the base of the bill rough and approaching to a white colour. Rooks build in communities, usually in tall trees, and very frequently around mansions, large farms, and churchyards. Occasionally, however, they are found to build in trees not lofty, and that by choice. It is hard to divine the reason for it, but they have showed much predilection for a London residence. They formerly used the trees of the Temple Gardens as a building site, and in the gardens of Carlton Palace they did the same until the trees there were cut down, when they removed to the trees behind New Street, Spring Gardens.

“Some years ago there were several large elm trees in the college garden behind the Ecclesiastical Court, Doctors’ Commons, in which a number of rooks had taken up their abode, forming in appearance a sort of *convocation* of aerial ecclesiastics. A young gentleman who lodged in an attic, and was their close neighbour, frequently entertained himself with thinning this covey of black game by means of a crossbow. On the opposite side lived a curious old civilian, who observing from his study that the rooks often dropped senseless from their perch, or, as it may be said, without using a figure, *hopp’d the twig*, ‘making no sign,’ nor any sign being made to his vision to account for the phenomenon, set his wits to work to consider the cause. It was probably during a *profitless* time of peace, and the doctor having plenty of leisure, weighed the matter over and over, till he was at length fully satisfied that he had made a great ornithological discovery, that its promulgation would give wings to his fame, and that he was fated by means of these rooks to say

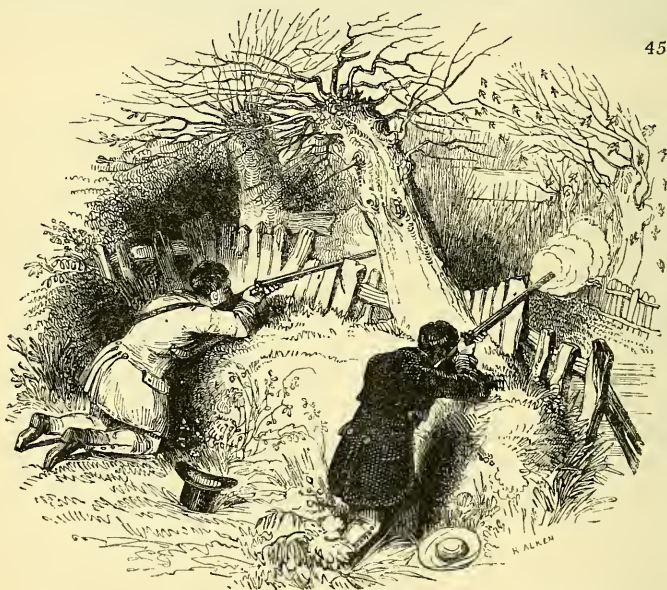
‘*Volito vivus per ora virum.*’

His goosequill and foolscap were quickly in requisition, and he actually wrote a treatise, stating circumstantially what he himself had seen, and, in conclusion, giving it as the

settled conviction of his mind, that rooks were subject to the *falling sickness*." (*Every Day Book*, i. 494, 5.)

2771. *The crow* is not a model of the rook. The bill of the former is more arched; and its tail feathers are less rounded than those of the rook. The last year's nest is again made use of, and trimmed up and put into fresh order; and where a robbery has been committed, the stolen pieces are replaced with new ones. Bewick says they will rob each other when they can: and it is to be regretted that few rookeries are peaceable, something or other always occurring to call up fierce contention among them. A few *Johnny Newcomes* will frequently occasion terrible warfare in the colony, which is seldom settled but by the expulsion of the intruders.

2772. *Rook shooting*. When the young birds are able to leave the nest, which occurs earlier or later in May, according to circumstances, they are usually seen sitting round the edge of the nest awaiting the visit of the parent bird to feed them. Every day they may be observed to gather strength and to become more active, hopping from bough to bough, and now supporting themselves with their wings, when unbalanced by the wind or their own exertions. It is now that they are assailed with the crossbow, the boltbow, or with the bow and arrow, which, making little disturbance, does not injure the rookery, and finds practice for the younger as well as more experienced sportsman. The air-gun still finds favour in some eyes, but it requires caution and much experience in the user. Jackson's patent steel crossbow is now in request for this sport, and, no less so, that of the ingenious Mr. Braggs, of Holborn, figured and described at p. 146., with full directions for its use. Of course these are principally employed in firing at the sitting birds. The *élite* among



ROOK SHOOTING.

the shooters, however, take the birds on the wing, with either the common shot gun loaded with No. 5. shot, or with Eley's patent shot chargers, or some use the rifle, and even thus bring them down with precision. Such are the sports of rook shooting, and when the birds are strong on the wing it offers very pleasing diversion; and although we cannot say that rook pie equals pigeon pie, yet we were always content to partake of it, particularly when it was the produce of our own, or the united labours of a friendly rook shooting party.

SUBSECT. 4. *Redwing, Fieldfare, and Lark Shooting.*

2773. *Redwing, fieldfare, and lark shooting*, although minor sports, yet serve to circulate our blood in frosty weather; and, beyond that, to give us exquisite morsels as edibles. Both the fieldfare and the redwing interest us much, both by their external beauty and the regularity of their appearance among us, the redwing being a little in advance of the fieldfare; and both act as heralds in proclaiming the approach of the woodcock. The redwing (*Turdus Iliacus* Linn.) is about eight inches long, and weighs nearly two ounces

and a half. It is in plumage not unlike the thrush, but is distinguished from it by a considerable white streak over the eye. It is a winter visitor, and leaves us in the spring, emigrating to Norway and Sweden, where it is prized for the sweetness of its song, and formerly was fattened for, and then transported to, Italy for the Roman epicures, being indeed a delicate morsel. It is like other flock birds most approachable in very hard weather, but even when a flight is on the ground we have, as with fieldfares, always observed one or more scouts posted aloft on some tree top to give notice of the advance of an enemy.

2774. *The fieldfare* (*Turdus pilaris*, Linn.) in length rather exceeds the redwing, being ten inches long and seventeen broad, and weighs near four ounces. Its yellowish black tipped bill and its whisker, or mouth hairs, are observable characters: its head is of a light ash colour and its rump also: its breast, spotted as it is with dark markings, adds much to its gaiety of appearance. It arrives in October in prodigious flocks; and when the weather is very hard is tolerably approachable, so as to be shot in numbers from the bushes. They may likewise be approached when a flock has settled on the ground in search of food; but having even then a scout perched aloft, it is prudent to have a fixed hiding-place, from which they may be fired at. We used on such occasions not to leave our hide after our shot, but waited, and it usually happened that the same flock again descended in the same place, or so near it, that we could take another shot. Mr. White has remarked, that it is somewhat surprising that, so very similar in habits, &c. &c., as the fieldfares are to blackbirds and thrushes, they should never breed together in England. Another singularity in their habits is, that whereas they sit in lofty trees and tall hedges during the day, they prefer to roost on the ground at night; and hence they are so often taken in the nets swept over the stubbles and meadows by night netters. The redwings, on the contrary, are often taken by bat fowling nets from the hedges in which they roost.

2775. *Lark shooting* is an amusement that we presume most of our sporting readers have at some period of their lives engaged in, particularly in winter, when a moderate fall of snow at once congregates these birds in vast flocks, and sends them into the stubble fields in search of food. Very few morsels excel larks in flavour. The lark (*Alauda Arvensis* Linn.) is about seven inches long, and wears a general tint of ru'ous brown, more lively in some parts of the body than in others, but pleasing in all. It bears, also, on the crown of the head, a set of feathers rather longer than the rest, which it erects at pleasure. Mr. Mudie says, "The lark selects her ground with care, avoiding clayey places, unless she can find two clods so placed as that no part of a nest between them would be below the surface. In more friable soils she scrapes till she has not only formed a little cavity, but loosened the bottom of it to some depth. Over this the first layers are placed very loosely, so that if any rain should get in at the top, it may sink to the bottom, and there be absorbed by the soil. The edges of the nest are also raised a little above the surface, have a slope outwards, and are, as it were, thatched. The position in which the bird sits is a further security; the head is always turned to the weather; the feathers of the breast and throat completely prevent the rain from entering the nest at the side, while the wings and tail act as pent-houses in the other parts; and if the weather be violent, and the rain fall at a small angle with the horizon, the forepart of the bird, upon which the plumage is thickest, receives the whole of it." (*British Naturalist*, ii. p. 118.) Grahame on the same subject says,

"The daisied lea he loves, where turfs of grass
Luxuriant crown the ridge; there, with his mate,
He founds their lowly house of withered herbs
And coarsest spear-grass: next, the inner work
With finer and still finer fibres lays,
Rounding it curious with his speckled breast."

It generally lays four eggs, which are a little larger than those of a titlark, and which it deposits in May, but if any thing happens to frustrate its purpose, it has been known to lay as late as September. Few are aware of the importance of this bird as an edible in some countries. Doctor Latham remarks, that the duty paid at Leipzig for larks amounts to twelve thousand crowns per annum, at a grosch, or twopence halfpenny, for every sixty larks; we may therefore suppose how extremely plentiful they are there. In shooting these birds what we have already said contains nearly all that is necessary, except that when it is practised in a snow, it may be well to hint that in home fields it is an excellent lure to sweep away the top snow and then to sprinkle chaff over the swept surface. We will suppose one of an area of twenty yards: if the weather be not sufficiently severe to have tamed the birds, do this in such a manner that a hedge shall intervene between the marksman and the larks. By this method many other birds may come within the line of aim, and the sport may be also carried on at slight intervals during the whole of the day. It is in this way that in very severe winters wood pigeons also are brought to bag. We have seen a field in Hertfordshire studded with them, intermixed with larks, fieldfares, sparrows, and in fact with all the grain-eating tribes; at the same time we knew a gardener in Kent who so lessened a large team of wildfowl that visited his cabbages, as eventually to leave but three or four alive. It is however only in frosts of great length and intensity of cold that such scenes are met with.

Our own natural attachment to animals in general has prevented any wanton waste of life; and it has been in pursuance of our wish to imbue others with the same feelings, that we have so often and so strongly recommended to the sportsman to mix with his field pursuits the study of Natural History as an acquirement that would tend to lessen his desire for destruction, and increase his ardour in forming a more interesting acquaintance with the objects of his pursuit, than that of enrolling them among the number of victims in his game list. "In Natural History," says Mudie, "and more especially in the natural history of birds, which, from the fleetness of their aerial motions, carry the mind more readily and directly over the general map of the earth than any other class of the earth's productions, this inversion of the order of Nature — this substitution of the end for the beginning — is peculiarly hurtful, and must be the cause why people, even well informed otherwise, know so very little about the nature and habits of those species which are before their eyes every day, and which appear to come for the express purpose of being observed and studied. Take, as a familiar instance, the common redbreast, and ask your next neighbour when and where it builds its nest, what are the number and colour of its eggs, how long the incubation lasts, how the young are fed, and on what, and the chances are many to one that you do not get direct answers; and if you do, they are the second-hand answers of some one who has written a description of the bird, which, if original at all, has most probably been obtained from observations in a climate differing from yours, and therefore is not quite as accurate as the description of your redbreast. Carry your interrogations a little farther: ask what is the geographical distribution of the bird? what are its uses in the general economy of Nature? and you will find the answers still more difficult to be obtained, as well as more unsatisfactory in the few cases where you can obtain them." (*Natural History of Birds*, p. 21.)

2776. SUBJECT. 5. *We append a list of London Gun-makers for 1858, extracted from the Post-Office Directory.*

- Adams, Henry, 54. Gray's-inn-lane, Holborn.
 Adams, Robert, Henry-street, Bermondsey.
 Ashton, Mrs. I., Swallow's-gardens, Goodman's flds.
 Baker, Elizabeth, and Son, 7, Union-street, Whitechl.
 Baker, Fred. Thos., 88. Fleet-street.
 Barnes, Frederic, and Co., 109. Fenchurch-street.
 Barnett, John Edward, and Sons, 134. Minorities.
 Beattie, James, 205. Regent-street.
 Beckwith, Hy., 33. Fieldgate-street, Whitechapel.
 Beckwith, William A., 58. Skinner-street, Snow-hill.
 Bishop, Wm. (agent to W. Richards), 170. New Bond-street.
 Bissell, Thomas, 75. Tooley-street.
 Blake, John Alkin, and Co., 35. Upper East Smithfild.
 Bianchi, John, and Son, 29. Gracechurch-street.
 Blissett, John, 322. High Holborn.
 Bond, Edward and William, 142. Leadenhall-street, and Hooper-square, Goodman's-fields.
 Boss, Thomas, (*patent*), 73. St. James's-street.
 Chambers, John, 46. Lambeth-street, Hooper-square.
 Cogswell, Benjamin, 224. Strand.
 Colesby, Ephraim, 1. Black Horse-alley, Fleet-street.
 Colt, Col. Saml., (*patent*), 14. Pall-mall; and manufactory, 27. Chandos-street.
 Cressall, Wm., 45. Bedford-row, Holborn.
 Deane, John, and Son, 30. King William-street, City.
 Denyer, Bernard, 131. Holborn-hill.
 Dickinson, Herbert, 2. Little Prescott-street.
 Egg, Durs, 4. Colonnade, Pall-mall.
 Egg, Henry, 1. Piccadilly.
 Fairman, James, 23. Jermyn-street.
 Fisher, Charles, 8. Princes-street, Soho.
 Fisher, William, 9. Belvedere-crescent, Lambeth.
 Fuller, George, 280. Strand.
 Gilks, Charles Henry, 3. Union-row, Tower-hill, and 67. Minorities.
 Golding, Wm., 3. Mount row, Berkeley-square.
 Greener, William, (Daniel Beale Harvey, agent), 42. Ely-place, Holborn.
 Grey, William, 41. Old Bond-street.
 Groom, Richard, 10. Wellington-passage, Stepney.
 Harold, Victor, and Co., 9. Green-st., Leicester-sq.
 Hast, Friedrich E. D., 18. Aldermanbury.
 Heptinstall, Wm., and Son, 18. Swan-street, Minrs.
 Holland, James, and Son, 44. Gt. Prescott-street, and 44. Tenter-street, south, Goodman's-fields.
 Holland, Harris John, 9. King-street, Holborn.
 Höller, Albert and Edward, 16. Gresham-street.
 Jackson, Rd., 30. Portman-place, Edgeware-road.
 Jackson, Thos., 29. Edward-street, Portman-square.
 Keen, Job, and Son, 61. Glo'ster-st., Coml.-rd., east.
 Lancaster, Charles, William, and Alfred, 151. New Bond-street, and 2. Little Bruton-street.
 Lang, Joseph, 22. Cockspur-street, Charing-cross.
 Leigh, John, and Son, 1. Duncan-street, Whitechl.
 Ling, William, 61. Jermyn-street, St. James's.
 London Armoury Company (limited), (Robt. Adams, manager; Thos. Finlayson, sec.), Henry-street, Bermondsey-street.
 London, Edward, 51. London-wall.
 Malherbe, Prosper, and Co. (Rochussen and Co., agents), 13. Gt. St. Thomas Apostle, and 75. Cannon-street west.
 Manton, John, and Co., 4. South-st., Grosvenor-sq.
 Manton, John, and Son, (*patent*), 6. Dover-street.
 Marnes, John, 7. Kennington-row.
 Mason, Rtl., 47. Tenter-st., south, Goodman's-fields.
 Moore, William, and Co., 43. Old Bond-street.
 Moore and Woodward, 64. St. James's-street.
 Needham, Joseph, and Co., 26. Piccadilly.
 Nock, Samuel, 116. Jermyn-street, St. James.
 Parker, Field, and Son, 233. High Holborn, and 58. Mansell-street, Goodman's-fields.
 Parkin, Mrs. C., 3. Marylebone-street.
 Potts and Hunt, 32, and 53. Leman-street, and 27. Tenter-ground, Goodman's-fields.
 Pritchett, Robert Taylor, 86. St. James's-street, and factories, 59. Chamber-street, and 24. Gt. Prescott-street, Goodman's-fields.
 Proctor, William, 82. Leman-street.
 Purdey, James, 31½. Oxford-street.
 Reed, Archibald, 5. Fountain-place, City-road.
 Reilly, Edward M., (*atr*), 502. Oxford-street.
 Reilly, Joseph Charles, 502. Oxford-street.
 Richards, Westley, (W. Bishop, agent), 170. New Bond-street.
 Riviere, Henry, 2. Davies-street, Berkeley-square.
 Roberts, Geo., jun., 17. Gt. Chapel-st., Oxford-st.
 Roberts, John, 6. Little Chapel-street, Soho.
 Rutter, William, 48. Aldenham-street, Somers town.
 Smith, John, and Son, (Henry Adkins, agent), 4. Thavies-inn, Holborn.
 Smith, Samuel, and Chas. 64. Princes-street, Soho.
 Smith, Thomas, 13. Little Compton-street, Soho.
 Spearman, J., 25, and 26. Chamber-st., Gdmn.'s-flds.
 Stapp, Richard, 16. Road-side, Mile-end.
 Stringer, William, 86. High street, Camden-town.
 Sturman, Benjamin, 45. Kingsland-road.
 Sturman, George, 4a. Church-row, Islington.
 Tatham, H., 37. Charing-cross.
 Turney, Hy., 2. Jamaica-ter., West India Dock-rcad.
 Whistler, Edward, 11. Strand.
 White, E., 3. Worcester-street, Old Gravel-lane.
 Wilbraham, John, 5. Pavillon-terrace, Battersea.
 Wilkinson and Son, 27. Pall-mall.
 Witton, Brothers, 21. Great St. Helen's.
 Witton and Daw, 57. Threadneedle-street.
 Yeomans, Mrs. Elizabeth, Tenter-street, west, Goodman's-fields.

PART VIII.

FISHING.



THE ANGLER EQUIPPED.

2777. Oh, for the spirit of Izaak Walton, to paint the charms of angling in their true colours! To write of angling, for the pleasure and instruction of the angler, is indeed a delicate task. On no subject is a stranger to the craft more instantly detected. It is a recreation, with a spirit of its own. Piscator '*nascitur, non fit.*' But let it not be deemed impertinent if we premise somewhat concerning the *objects* of our sport: their classification, habits, and organic construction. Walton, too, was a naturalist; though Linnæus and Cuvier were as yet unborn.

 CHAP. I.

THE NATURAL HISTORY OF FISHES.

2778. *Fishes form so large and so important a proportion of the animal kingdom, and exhibit so much to interest us in their structure, habits, and instincts, that we shall be forgiven for entering into this branch of our art in some detail. Such knowledge adds a keener zest to sport. But it is to be lamented that to the study of ichthyology, or the knowledge of fishes, are added numerous obstacles which can hardly be said to belong to the other branches of zoology. The patience and exertions of man have enabled him to do much: by his enterprise he has been led to follow the wildest of the *Mammalia* into their retreats, and if he cannot yet entirely wing his aerial flight with the feathered race, he can still traverse the region of their wanderings by the sight, and can thus determine many of their habits. His leisure will enable him also to gain acquaintance with the forms and habits even of the wildest tribes, by forcing them into domestication with himself. But with the greatest efforts the element in which fishes live is in a great*

measure closed to him; no human invention can reach the depths of the ocean to critically observe the forms and manners of its inhabitants. With them our acquaintance under the most favourable circumstances is confined to transient glances, or to observations always made under disadvantages not easily overcome: nevertheless, the perseverance of the naturalist is triumphing over these obstacles by the invention of marine and fresh-water *Aquaria*. Our labours will commence by offering the systematic classification of fishes into orders, genera, and species, both of Cuvier and Linnæus. *Divide et impera*.

2779. *A systematic account of the nature and properties of fishes* is termed *Ichthyology*, and this constitutes so delightful a study to the angler, that we cannot proceed without a few remarks on the connexion of this with the objects of his pursuit. The numerous arts of fish to frustrate the fisherman must excite a wish for a more attentive examination of the animal than can be gained by merely taking it from the hook and transferring it to the basket. We are unwilling to suppose that the finny tribes, which present themselves to the angler in so many varieties of figure, displaying as they do such diversified habits, manners, and instincts, can raise no interest in his mind beyond that which attends the mere attempt at their destruction. On the contrary, we feel assured that such appearances as those we allude to will make him desirous to become more intimately acquainted with their natural history, and also with those physiological laws which regulate their existence; particularly if he wishes to learn how animals, formed like himself, of bone, flesh, and blood, are able to live and thrive in a medium speedily fatal to man. The interest of this consideration is greatly increased when he learns that the leading phenomena of *respiration* are the same in animals living in water as in those of dry land; and that the *air* is the *pabulum vitæ* both to the fisher and the fish. Can he, then, refrain from seeking to inform himself how these seeming inconsistencies can be reconciled?

SECT. I. *Systematic Division of Linnæus.*

2780. *The merits of Linnæus* in displaying every department of Nature are universally acknowledged. For ichthyology he first adopted the arrangement of Artedi, and thus the first edition of the *Systema Naturæ* presents the cetaceous or whale tribes as *fishes* of a particular kind; the *Malacopterygii* and *Acanthopterygii* as perfect fishes; while the *Branchiostegii* and *Chondropterygii* formed a kind of swimming amphibia, on a supposition that they had both gills and lungs. As the organisation of the subjects of the animal kingdom became more closely examined, the cetaceous tribes proved to be true *Mammalia*, and consequently were wholly removed from the ichthyological catalogue by the learned author himself. We must not, however, omit to notice in this place a name dear to every student of zoology; for while, in conformity with our plan, we are somewhat constrained to adopt the Linnæan system in our descriptions, we should do a manifest injustice to Baron Cuvier, did we not offer a few words on his ichthyological classification, which we recommend to the notice and admiration of the reader. At the same time truth obliges us to remark that his classification presents too much of an artificial basing, for it forces Nature rather than submits to her guidance.

SUBJECT. 1. *Systematic Division of Cuvier.*

2781. *Fishes are divided by Cuvier into two sub-classes*: 1. that of ordinary fishes, under the general denomination of *Ossei*, distinguished by having the skeleton bony, the osseous matter being disposed in fibres; the sutures of the cranium distinct; maxillary and intermaxillary bones, either one or both present. 2. that of the *Cartilaginei*, or *Chondropterygii*, distinguished by having the skeleton cartilaginous; the bones destitute of fibres; sutures of the cranium indistinct; maxillary and intermaxillary bones, either wanting or rudimentary, their place being supplied by the palatine or vomer. We should naturally conclude, from observing the great diversity in the general form of fishes, that the structure of their skeleton must be equally various. They agree together however, on the whole, in having a spine, which extends from the cranium to the tail-fin; and in having the other fins, particularly those of the thorax and abdomen, articulated with peculiar bones. They have, in general, unconnected with the rest of the skeleton, many more bones than the animals of the preceding classes. The cranium in several cartilaginous fishes (in the skate for instance) has a very simple structure, consisting chiefly of one large piece. In the bony fishes, on the contrary, its component parts are very numerous, amounting to eighty in the head of the *perch*. The majority of the latter have an under-jaw more or less movable.

2782. In the arrangement of Cuvier, which is adopted by Mr. Yarrell, the above sub-class, *Ossei*, is divided into six orders; viz. 1. *Acanthopterygii* (or spinous fins, as *Perch*); 2. *Malacopterygii* (soft fins) *abdominales* (as *Pike*); 3. *M. subbranchiati* (as *Cod*); 4. *M. apodes* (or without abdominal fins, as *Eel*); 5. *Lophobranchii* (gills tufted, as in the *Hippocampus*, or sea-horse); and 6. *Plectognathi* (as the *Sun-fish*). The second sub-class, *Chondropterygii*, is also divided into three orders, viz. 1. *Sturiones* (as *Sturgeon*); 2. *Selachii* (as *Sharks*; and 3. *Cyclostomi* (*Lamprey*).

SUBJECT. 2. *Division of Agassiz and Müller.*

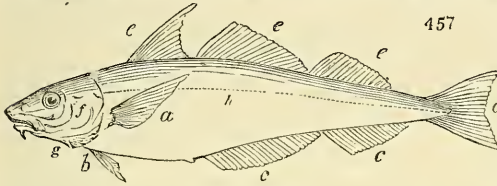
2783. Professor Agassiz, whose labours in the department of *Fossil* fishes are best known, afterwards proposed a division, founded on the structure of the *Scales*; and Prof. Müller, combining the systems of Cuvier and Agassiz, has divided Fish into five great orders: *Leptocardia*, *Cyclostomata*, *Teleostia*, *Ganoidea*, and *Selachia*. (See Dallas's *Animal Kingdom*, p. 291.) The nomenclature of Linnæus is followed here, except where otherwise specified.

2784. *The catalogue of fish in the Linnæan system* comprises about four hundred species. A great many have, however, been since added; and, without doubt, a certain number remain to be described. Of those, however, not enumerated by this truly great man, there are but few which would serve for the purposes of elucidation, and still fewer connected with the pursuits of the angler. Such, however, as come within either of these categories we shall not fail to notice.

2785. *Fishes form the fourth class of animals in the Linnæan system*, and are divided into six orders:—Orders 1, 2, 3, 4, are founded on the nature and situation of the *fins*, and also on the existence of *bony rays* in the gills; orders 5 and 6 are founded on a consideration of the nature of the *gills* and their appendages.

2786. *The fins are named according to their situation* (fig. 457.), as, *a*, pectoral fin; *b*, ventral fin; *c c*, anal fin; *d*, caudal fin, or tail; *e*, dorsal, or back fin; *f*, bony gill-covers; *g*, branchiostegous rays and their membranes; *h*, lateral or side line.

The ventral fins are held to be analogous to the feet of quadrupeds, and thus the first order, or *apodal*, embraces such fishes as want the ventral fins; order 2, or *jugal*, includes those with ventral fins placed before the pectoral; order 3, or *thoracic*, includes such as have the ventral fins immediately under the pectoral; order 4, or *abdominal*, comprises those which have the ventral fins behind or beyond the pectoral; orders 5 and 6 comprehend the car-



FINS OF FISH.

tilaginous division, and are founded on the nature of the gills and their appendages.

2787. *The Linnæan genera* are derived from the situation of the fins, the shape of the body, the covering, figure, structure, and parts of the head, with the gills and their appendages, but particularly from the branchiostegous membrane. The *Linnæan specific character* is taken from the cirri, jaws, fins, spines, lateral line, digitated appendages, tail, and colour.

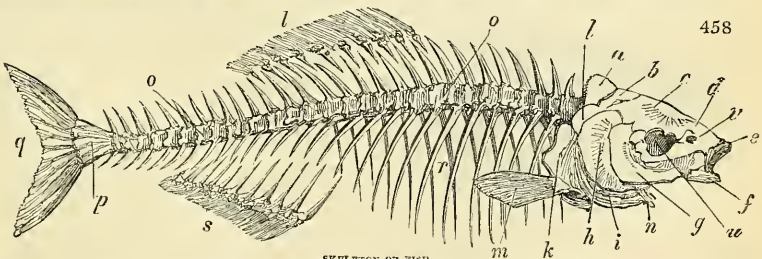
2788. *The anatomical examination of fishes* forms an interesting branch of their natural history. An extended philosophical acquaintance with the human frame necessarily requires the aids of human anatomy, nor can a similar knowledge of the animals around us be fully acquired but through the means of comparative anatomy. It is thus that our views of organisation, and its ultimate application to the phenomena of life, become generalised and so corrected. It is thus that the causes of many apparent anomalies in the habits and manners of animals are developed; and it is by these means only that an arrangement of them into congeneric groups can be satisfactorily made. The systems of classification already noticed, and the characters which their authors have seized on for their formation, sufficiently show that something more was necessary than what had hitherto been done.

2789. *It became evident long ago*, that it was not by mere distinctions as to form, size, colour, localities, nor even by reference to any individual set of organs, that a satisfactory classification could be made. A system of organs might be found to extend in faint lines through a whole species; yet it would often be attended with such modifications and anomalies in some of its members, as should greatly obscure the characters of identity. By the lights of comparative anatomy and physiology this conviction is pressed upon us, and we perceive more and more that it is only by a consideration of joint systems of organs, where an agreement in structure and functions is borne out by determinate vital phenomena in all the members possessing them, that we are enabled to form *congeneric groups* on principles equally just and demonstrable.

2790. *We propose on this subject to unite our anatomical and physiological inquiries*; and by thus considering the organic structure of the parts, together with their functional phenomena, we hope to divest the matter of tediousness, and at once combine amusement with instruction.

2791. *The osteology or bony structure of fishes* is particularly remarkable from the circumstance already noticed, that in some of them the fabric is built on a *bony*, and in others on a *cartilaginous* base. This difference of structure is very important to the naturalist, as by it the two great primary divisions of fishes into *bony* and *cartilaginous* are formed.

2792. *The bony skeleton.* A general idea of the plan of the fish bones may be gained from the skeleton of the carp (fig. 458.); *a*, the occipital bone; *b*, the parietal; *c*,



SKELETON OF FISH.

frontal; *d*, nasal; *e*, superior maxillary or upper jaw bone, which is movable; *f*, in-

ferior maxillary, or lower jaw; *g*, os quadratum, a bone peculiar to fishes, compounded of the branch of the lower jaw and the temporal bones; *h*, operculum, or gill-cover; *i*, radii of the branchiostegous membrane, by which the genera are characterised; *k*, a kind of humerus, or arm bone, to which the thoracic fin or forearm is attached; *l*, an imperfect scapula; *m*, thoracic fin; *n*, lingual bone; *o*, *o*, the spine; *p*, extension of the last caudal vertebra for the attachment of the caudal or tail-fin; *q*, caudal or tail-fin; *r*, the ribs; *s*, anal or vent-fin; *t*, dorsal-fin; *u*, orbit, or cavity for lodging the eye; *v*, palatal bone.

2793. *It must not however be supposed*, that the bones of one fish can be with propriety taken as a correct type of the whole. The general assemblage of their osseous fabric is altogether more complicated than that of most other animals. It varies in form and proportion very greatly in different species, and in point of number there is hardly any affinity among them, there being three times as many bones in one fish as in another; this is particularly the case with the minute bones. Even in the division of fishes called osseous, the earthy part of the bones is less than in other animals, thus rendering them rather semicartilaginous than firm bone; and, on the other hand, in the cartilaginous fishes their cartilages are fortified by walls of ossified membrane; so that both divisions are somewhat approximated in structure, notwithstanding the distinctiveness of their appellations.

2794. *The cartilaginous skeleton* is very difficult to exemplify by any individual figure. Some of the larger flat fish, as the skate, may have their cartilaginous fabrics exemplified as they fall into decay; but in the lesser cartilaginous fishes it is not an easy matter to represent them. There are head bones, so called; thoracic cartilages, or bones; a vertebral column extended into caudal vertebrae, or tail. There are also pelvic cartilages, or bones, to which the anal fins are articulated. Costae, or ribs, are apparent, and surrounded by the pectoral fins, which in these flat fish appear like a continuation of the sides.

2795. *The bones of the head of fishes* being covered with skin only, give to this part a very rugged outline; and in most of them the head is large in proportion to the body, and is as diversified in figure as in the number of bones that enter into its composition. For, while the perch has eighty bones in its head, and some other fishes have many more, others have not half the number. In all they unite by ossification, as age advances. The skull is articulated with the neck by a single tubercle of the occiput in some fishes, and in others by means of two condyles; but in all it is so joined as to admit of little motion, which would have been inconvenient; and as they receive their food for the most part horizontally, it would also have been unnecessary.

2796. *The teeth of fishes* are not in general connected with the skeleton, and as by far the greater number do not masticate their food, their teeth are tentacular or hook-like; and are also variously placed, as in some on the tongue, in others on the palate, throat, and even on the cartilaginous arches of the gills. By means of these anomalous teeth they hold fast their prey, and when it is too large for perfect deglutition, they are enabled thus to retain it until the stomachic portion is dissolved. Such fishes as have no teeth within the mouth, are called *leather-mouthed*: such are the carp, sturgeon, &c. In the pike, on the contrary, the teeth cover the mouth and throat most extensively.

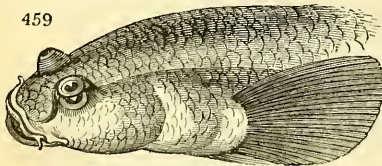
2797. *The vertebral column* is extremely varied in the number of its pieces, which however are determinate in nearly allied species. Artedi was induced to seize on them, as characters to distinguish the species; and the value of this anatomical fact is farther proved in the investigations of Mr. Yarrell, who considers himself thereby enabled to determine that the diminutive fish *whitebait* is not the young of the shad (*Clupea Alosa*), as hitherto considered by naturalists, the number of vertebrae in the shad being invariably fifty-five, whereas in the whitebait it is uniformly fifty-six. The vertebral column is sometimes angular, often cylindrical, and occasionally compressed.

2798. *The ribs of fishes* (fig. 458.) are very much diversified, being double in some, forked in others, and in a third variety altogether wanting. With regard to shape, they are compressed in the carp, round in the cod, and bristle-shaped in the herring. Within the area of the gills, the sternum or breast bone, the scapulæ or shoulder blades, and the clavicles or collar bones, are placed. Thus, amidst diversities of character the most extraordinary, there is exhibited throughout animated nature a traceable unity of design. In flat fish the want of ribs is compensated by the extreme length of the transverse processes. Two pelvic bones also exist, which defend the abdominal viscera.

2799. *The brain in fishes* is an object of extreme curiosity, for although it is of a thin jelly-like consistence only, yet its various parts are as distinct as those of quadrupeds and birds; the divisions of the cerebrum and cerebellum are even more numerous. (See Cuvier and Valenciennes, *Histoire Naturelle des Poissons*, i. 415—434, where the most complete works on the development of the brain in fishes are named, viz. those of Serre, Areaky, Desmoulins, &c.; see also Mr. Gore's illustrations appended to the *Comparative Anatomy of Carus*, published by Messrs. Longman and Co.) Through the intermediate spaces of the dorsal vertebrae may be seen the spinal cord, of a size not proportioned to the brain from which it proceeds, or of which it is a continuation, but always in proportion to the dimensions of the body.

2800. *Fishes, like other red blooded animals*, have most of them two eyes. We say most, because, while anatomy has failed to detect them at all in a few species, of which the gastrobanchus is an instance, the four eyed anableps, or loach (fig. 459.) exhibits the wonderful anomaly of four apparent eyes, looking through two orbits. Altogether the visual organs of fishes exhibit diversities of situation, form, and external appearance, more numerous and striking than those of most other animals. The general arrangement of the eyes in fishes is that of one on

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each side of the head: in what are termed flat fish, they are however both placed on the same side, with a slightly oblique aspect. As the habits of these fish force them to recline on one side on the ground, without this peculiar formation the sight of one eye would have been lost; but with the eyes thus placed, the fish can direct both of them upwards, as well to protect itself as to watch for its prey which swims over it.

2801. *The organs of hearing in fishes* have been the subjects of much discussion, their existence in fish having been denied by naturalists, until anatomy at length removed all doubt on this point, although some anglers are still sceptical on the subject. It is remarkable that even the observant Linnaeus was not able to satisfy himself that any auditory organs could be discovered in fishes,—an oversight which probably arose from the particular specimens he examined, as in some fishes no external orifice can be detected. But even when it cannot, there is always an internal auditory apparatus, and the sonorous wave reaches a tremulous mass veiled under a thin bony lamella, from which the tremors are spread over the *sensitive organ* within. The Abbé Nollet ascertained, by conclusive experiments, detailed in the *Histoire de l'Académie des Sciences*, 1743, p. 26., that the human ear was susceptible to sound when immersed in water. The attention of Camper, Hunter, Vicq d'Azyr, and Monro, was afterwards directed to the demonstration of the auditive apparatus in these animals. (See *Phil. Trans.* 1782, p. 373.)

2802. *The auditive organ.* There is nothing on the exterior of the head of the fish to indicate that it is provided with an ear. In the higher animals the mechanical apparatus of hearing consists of an external and an internal portion : in fishes the internal portion alone exists, and is hardly inferior in perfection of form and structure to that of creatures placed higher in the animal scale. The nerves distributed to the organ of hearing are of large size, and the vital apparatus, or portion of brain, from which the former proceed, is also considerable. There exists, however, this important difference between the organ of hearing of terrestrial animals and fishes, namely, that the ear in the former is organised for the reception of the more delicate vibrations of the atmosphere, while in the latter it is adapted to the rude oscillations of a denser element. We may make this difference apparent by the following simple illustration. The impulse occasioned to the air by the ticking of a watch is so weak, as to be indistinctly heard when the watch is brought close to the ear ; but if we convey the watch to a greater distance from the ear, and press it against the teeth, we hear the ticking with remarkable distinctness. In the language of science, solid and dense bodies vibrate with greater intensity than lighter media, such as the atmosphere. When the watch is held high to the ear, the atmosphere is the conductor ; when the watch is connected with the ear, by the intervention of a rod of wood, or the solid parts of the head, these are the conductors. Now the apparatus of hearing of the fish presents conditions of the latter kind ; water, a denser body than air, is the conducting medium ; and the solid mass of the head, and, in fact, of the entire body, completes the conduction to the vital apparatus. Hence, in fishes, an humble contrivance is capable of effecting the same end as the higher-toned instrument of terrestrial animals.

2803. *As fishes thus evidently possess the organ of hearing in a moderate degree of perfection, they must therefore hear with moderate acuteness*, particularly such sounds as occasion a vibration of the element in which they reside ; for example, an approaching footstep ; while the sounds which proceed from musical instruments, being less easily conveyed, are probably unknown to them ; certainly this is the case with regard to tone. Those curious porcelain-like bodies, which are found in the head of the fish, and which must be known to every investigator of the gastronomical merits of his game, form part of the mechanical apparatus of hearing.

2804. *The organs of taste in fishes are very obscure*, though there is little reason to doubt that they have some discriminating powers in the choice of their food beyond that of smell. The tongue is, however, very imperfectly developed ; it presents no papillæ, and is supplied with none of the usual gustatory nerves. Fishes have been known to swallow the plummet of the fisherman instead of the bait ; and hence it is probable that this sense is at least indistinct and weak. In this, however, as in every other part of our present subject, great diversity of opinion prevails. Cod will swallow almost any thing, such is their voracity and insensibility ; but on the other hand it must be confessed, that some fishes are sufficiently dainty. Taste is at all times, and in all animals, a modification of common sensation, or the simple sense of touch. Its seat in fishes is probably the whole interior of the mouth, the tongue of these creatures being, as is well known, very small and very imperfectly developed. We cannot give the fish credit for any refinement of taste ; which, with touch and feeling, occupies the lowest rank of the nervous senses.

2805. *The external or mechanical apparatus of the organ of smell* is a pair of small cavities or chambers, communicating with the aqueous element by means of four apertures, and situated near the extremity of the snout. The two openings of each olfactory chamber are intended to permit a free ingress and egress to the water in which the odorous principles are dissolved. But there exists no contrivance, as far as we know, for maintaining a constant current through the chambers. In this particular, the organ of smell of fishes is greatly inferior to that of higher animals ; for in the latter, the olfactory chambers give passage to the greater part of the air which enters the lungs, and are thus enabled to test the quality of all the air received into the chest for inspiration. In fishes this power is less requisite, hence the inferiority of construction. The olfactory chambers are lined by a soft membrane, technically a mucous membrane, which is richly supplied with blood-vessels, and is brought into connection with the vital organs by means of a moderately large conducting nerve. The arrangement of this membrane evinces one of those beautiful contrivances which are so frequently met with in the animal machine, and which are intended to provide a large surface within a limited space. In order to increase the extent of this membrane as much as possible, it is thrown into a multitude of minute plaits which radiate from a central point, and have a very elegant appearance. From the back of the olfactory chambers there proceed, as we have already stated, two nervous cords, which conduct the impressions received by the mucous membrane to the brain. The vital apparatus of smell, like that of sight, consists of two round masses or lobes of nervous substance, which occupy the front of the brain, and preside over the manifestation of the olfactory faculty. They are inferior in size to the optic lobes, though often as large as the hemispheres of the brain. We are thus supplied with conclusive evidence of the possession by fishes of a power of smell, still so slight and undefinable that the use of scented baits is not advisable. The mechanical and vital portions of the apparatus, with the conducting nerve from the former to the latter, are complete ; the only question which requires solution is the degree of the sentient power. The vital apparatus being large would be an argument in favour of vividness of perception ; but the small mechanical portion, and especially the absence of a stream of water through the olfactory chambers, leave the organ imperfect. On these grounds we should be inclined to give the faculty of smell a position next in order to that of hearing, and greatly inferior to that of sight.

2806. *The organs of vision or sight in fish.* The mechanical apparatus of sight, the eye, or, as it is popularly termed, the eye-ball, or apple of the eye, is an optical instrument of great perfection. In man, and in the higher animals, the eye-ball is very nearly globular ; the deviation from the perfectly spherical shape being in favour of a greater convexity of the transparent front of the organ. In fishes, on the contrary, the breadth of the eye greatly exceeds its depth, and it is flattened in front to a remarkable degree, presenting, in fact, the form of a segment of a sphere ; hence, it is no uncommon thing to find the circumference of the eye-ball strengthened by a thin cup of gristle, and, in some instances, of bone. There is another remarkable difference between the eye of terrestrial animals and fishes—a difference which has reference to the nature of the medium in which the creature lives. For example, the density of water is so much greater than that of air, that it is employed in the construction of the eye-ball of man, and the rest of the air-breathing terrestrial animals, as a means of directing the rays of light towards the bottom of the eye, upon which the nervous curtain is spread which receives the picture of external nature. But in fishes it is evident that water, as a medium of refraction of the rays of light, would be perfectly useless, since the medium is aqueous through which all the rays reach the transparent window of the organ of vision. The chambers of the eye of the fish, which in other animals contain water, are consequently those which are most easily spared ; and it is the reduction of capacity in them that gives rise to the flatness of the front of the eye. The proper refracting apparatus of the eye-ball of the fish is a transparent globe of considerable density and size, termed the lens. In terre-trial animals the lens is small, it is scarcely more convex than a common magnifying glass, and it is soft in its texture. That of the fish, however, is a much more powerful

agent in the refraction of the rays of light, and approaches in some of its characters to the finest glass. By it the rays of light which pass through the transparent window (cornea) in the front of the eye are immediately received, and are as suddenly concentrated in the smooth expanse of the optic nerve, to be transferred by the latter to the vital apparatus. As is usual in optical instruments, there is a thin partition pierced with a circular aperture (the pupil), interposed between the transparent membrane of the front of the eye and the lens. This membrane is intended to regulate the admission of the luminous rays. In some fishes there are two apertures, or pupils, in place of one, in this partition,—a curious modification; while in some others, as in the common skate, a broad curtain with a vandyked border is suspended immediately behind the pupil at its upper part, and serves to veil the interior of the eye against the vertical rays, which would otherwise interfere with vision. The enumeration of all the modifications in the construction of the eye of the fish with which the naturalist is acquainted, would form of itself an interesting chapter; but the subject is too comprehensive to be more than glanced at in this brief sketch. The question is more fully treated of in a philosophical Essay written by Erasmus Wilson, F.R.S., for *A Handbook of Angling*, written by "Ephemera," and published by Messrs. Longman and Co.

2807. *The organs of touch in fishes* are not strongly marked. The skin is destitute of the papillary membrane; and this circumstance has engendered in the minds of anatomists a belief that the sense of touch is altogether wanting, or at best but very obscure. Sensation, like intellect, resides in the hemispheres of the brain, and the inference deduced from the smallness of these organs appears to be just with regard to the faculty in question. Fishes are as deficient in sensation as they are abundant in motion; but the last named faculty has no necessary connection with feeling: few of the motions of the fish are due to sensation, and almost as few to the will; therefore, motion alone cannot be taken as an index of sensation. In irritability they are not defective, as appears from the resistance they make to violence; but nevertheless we do not believe their feelings to be acute.

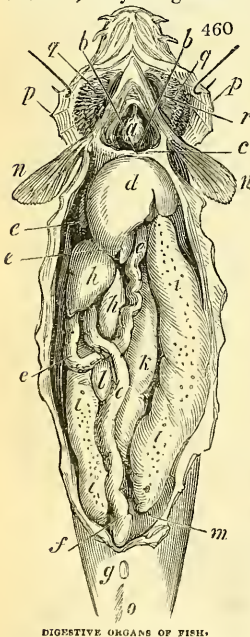
2808. *Fishes have no organs of voice.* This must be at once apparent, when we consider that they have neither larynx nor lungs properly so called. The small sound emitted by pike occasionally is a kind of sigh, produced by expelling the air through the nearly closed gill-flap. The dying snap of the herring is caused by a convulsive closing of the same part; and the sucking or chuck of the carp, in warm sunny days, when swimming near the surface, is, we are inclined to think, effected by the lips. This action may probably be occasioned by some application of the mouth to the large leaves of aquatic plants, for it is most observable when the fishes are beneath or near them.

SECT. III. *The Digestive System in Fishes.*

2809. *A view of the principal viscera*, employed as well in digestion as in other important functions, may be gained by judiciously placing a fish for the purpose of inspection.

Fig. 460. exhibits a member of the carp family (*G. Cyprinus*): *a*, the heart, from which proceeds *b*, the dilated aorta; *c*, the diaphragm, or membrane which divides the head from the chest; *d*, the liver; *eeee*, the intestines; *ee*, the stomach, seen protruding from under the liver; *f*, the rectum; *g*, the vent; *h h*, the kidneys, which in some fishes, as in the *Cyprinus*, are very large, and almost united in one uniform mass, not unlike the spleen; *iii*, the ovaries or spawn, seen much enlarged previous to spawning; *k*, the air bag or swim; *l*, the spleen; *m*, the bladder; *nn*, the pectoral fins; *o*, the anal fin; *p p*, the bronchial membrane stretched open by hooks in order to display the gills; *q q r*, the cartilaginous arches of the gills.

2810. *The digestive system in fishes* exhibits innumerable modifications in the form and structure of the organs concerned, as might be expected in animals which present the diversities of carnivorous, piscivorous, insectivorous, and omnivorous. The structure of their assimilating organs does not however follow all the analogies which usually present themselves in the parallel organs of carnivorous, graminivorous, and omnivorous *Mammalia*. On the contrary, in some fishes in whose stomachs the *Crustacea* are frequently found, the organ itself is rather thin and membranous; and in others, habituated, as we suppose, to feed on insects and the smaller fishes, a decidedly muscular gastric structure of considerable substance is present, as in the mullet, salmon, trout, &c. "The distinction," as observed by Cuvier, "between the large and small intestines in fishes cannot always be established with certainty. Sometimes it is the upper part next to the anus that is smallest, at the same time that its parietes are thinner than those of the intestines above it: such is the case in rays, sharks, the sturgeon, and the bichir, where the first part of the intestine has a spinal valve; and in the syngnathi, ostracious, and balistes, where the first is separated from the second part of the intestine by a circular valve. In other cases there is no difference in the diameter of the two divisions of the intestine; which however are distinguished by variations in the structure of the mucous membrane, or even by the presence of a circular valve. There is not any appendage to the intestine at the point where its two divisions (when they exist) communicate, the one portion inosculating with the other in such a manner as not to leave any *cul de sac* of sufficient importance to deserve to be distinguished by any particular name."



2811. *Among the peculiarities of structure* in the digestive organs of fishes, we must notice that of the stomach of the gillaroo trout, in which fish it much resembles a gizzard in structure, having thick muscular walls, not unlike those of large granivorous fowls. Among epicures it is usual to dress this part alone, on account of its great substance, firmness, and flavour.

2812. *The digestive process in fishes* is unquestionable, but it is conducted in them with some peculiarities. Thus, in the greater number, the food taken into the mouth receives no mastication, the teeth being merely prehensile, and the jaws having little lateral motion. Neither is there any salivary mixture, but the edible matter is at once swallowed. The gullet is so short in most fishes, that the stomach (*e e*, *fig.* 460.) appears almost to open into the mouth. The dilatability of the œsophagus must be familiar to the trolling angler, who beholds the enormous size of the fish that a moderately large pike is able to take into his maw. Occasionally the whole cannot be taken at once into the stomach, and in this case the remainder continues in the gullet until digestion has lessened the bulk of the part taken into the stomach. If the portion remaining within the œsophagus be sufficiently considerable to interfere with the motion of the gills, or the admission of water, the animal becomes choked, as not unfrequently happens with pike. In usual cases, the food being received within the stomach, is there acted upon as in other animals, first becoming macerated; and then, by some solvent power, it is gradually reduced into a soft pulp, the nutritious parts of which are absorbed, and go to nourish the frame, the remainder passing into the intestines.

2813. *The capacity of the digesting powers in fishes is very great*; some of them are voracious in the extreme, and can take a quarter of their own weight of food into the stomach every twenty-four hours, owing to the wonderful rapidity with which they digest their food, particularly salmon and pike; yet their capability of *fasting* is to the full as remarkable: they can subsist for weeks, and even months, without any other support than the water they inhabit; and it is the opinion of some, that they can so subsist during the period of their natural lives. The facts, however, brought forward in proof of this are not of sufficient weight to set aside the analogies of nature and the evidence of structure. It is indeed related, on the authority of Rondeletius, that his wife kept a fish in a glass vessel for three years on nothing but water; and might have kept it longer, if it had not out-grown the vessel. If the good lady had been much of an experimentalist, she would not have grudged a new vessel for the sake of prolonging the life of the fish; and we are warranted in saying that, with this indifference as to the result, but little dependence is to be placed on the previous treatment. The statements respecting the long fasts of gold and silver fish are probably, in an equal degree, derived from the doubtful testimony of servants, visitors, &c. In a state of confinement, they seldom, if ever, live beyond one or two years; and if their lives were even extended beyond this period, their longevity would be insufficient to justify the assumption of a capability of surviving during their natural lives on water alone. The slow-worm (*Anguis*) will live inclosed in a bottle without food for two years, but eventually dies of inanition. Mr. Daniel, however, has gone into a long and laboured detail to demonstrate the existence of this power, so totally opposite to nature.

2814. *Mr. Daniel appears to argue*, that as water, which is a compound fluid, is found equal to the support and nourishment of vegetables, there is no reason to suppose otherwise than that water alone may suffice to support the life of fishes also. Would it not have been more to the point to have regarded the constitutional voracity of almost all fishes, and their predilection for some food before that of others, as a proof that food is necessary to their permanent existence, and the capability of abstaining therefrom is only occasional? Water indeed is, in most cases, so compounded, and holds in suspension so many animal substances, that we may be less wonder at any occasional proofs of abstinence from vegetable or animal matter.

2815. *The intestines of fishes* (*e e e*, *fig.* 460.) neither generally nor individually admit of comparison with those of *Mammalia*. In each genus a particular form is apparent, and thus the diversities throughout the whole alimentary track are great; but in the intestines they are particularly so. Their intestines are covered by a peritoneum, as in quadrupeds.

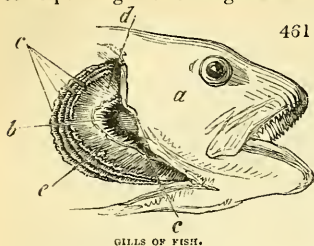
2816. *The fish vent, or anus* (*g*, *fig.* 460.), presents as many varieties of form and situation as the other parts of the body, and on these anal peculiarities Scelopoli built his system of classification. This opening forms in most cases the general passage for the urinary and intestinal functions, and for the deposit of spawn.

2817. *The liver is an important organ in fishes* (*d*, *fig.* 460.), not more on account of its size than of its individual importance in the animal economy. It lies principally within the left region of the abdomen, and is commonly either of a light yellow colour, or of a dirty brown. In some fishes it is undivided, as in the lamprey, flounder, salmon, &c.; in the perch, carp, and others, deep fissures divide it into lobes. The mass of the liver in fishes is strikingly cellular, and its cells are nearly filled with oil, whence in the larger tribes is derived an enormous quantity for domestic, artistic, and manufacturing purposes. When the liver is very large, the kidneys are usually small; but when it is comparatively small, the kidneys usurp its place, and are of great size. The secretion of this quantity of oil in the liver of most fishes is in accordance with the same general purposes for which some of them have been covered with a vast layer of oleaginous or fatty matter, particularly of those which inhabit the polar seas, such being by analogy observed to be the best defence against cold, and the best supply against occasional want of food.

2818. *A gall bladder is also present in most fishes*, but it varies greatly as well in size as in its contents in different species: in the salmon the bile is of a yellowish white; in the carp and eel very green, and in others of different hues. It is somewhat detached from the bladder, and pours its contents into the intestines by its cystic duct, sometimes continuous, and sometimes in contact with the hepatic duct. Fishes have a pancreas also, composed of numerous thread-like tubes, which pour a serous fluid into the first portion of the intestinal canal near the biliary orifice. The cartilaginous and broadly-extended fishes, however, have it more solid and massive. The spleen also in most fishes (*b*, *fig.* 460.), as in other animals, is so placed as to be subjected to pressure, which pressure it receives sometimes by means of the air-bag under which it lies, and sometimes by means of the stomach, liver, or intestines, so varied is its situation. It is plentifully supplied with blood, as in quadrupeds and birds, and it returns its blood to the liver.

2819. *The heart in fishes* (*a*, *fig.* 460.) is simply pulmonic, and one more systematic would have been unnecessary to animals, which receive as they do the blood from the veins, and

transmit the whole of it to the aërating organs. It consists of a single auricle and ventricle, corresponding with the right side of the heart in the *Mammalia*. It varies greatly in shape



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in different fishes, being triangular, quadrilateral, or semicircular, as it belongs to various genera. From it proceeds a large artery, which, subdividing, extends to the bronchiæ or gills, throughout the feathered rami of which it is most minutely ramified, and from whence having undergone a great change by coming in contact with the air, it becomes a vital fluid, fitted for the support of the body. The respiratory organs of fishes with free gills, which are considered as those that approach nearest to the aërating system in *Mammalia*, are represented by *fig. 461.*, where the head of a fish of the class with free gills is seen. The upper (c) with

its diverging rays, marks the leaflets of the gills of the most perfect kind, being four to each side of the head (e). Each gill is attached by means of a cartilage, which is united with the bones of the tongue at the lower letter (c), and is covered with a gill-lid, or operculum, but which is here removed: a marks the face of the fish, and the internal extent of the leaflets; b, situation of gill flap, extending from d to lower e.

2820. *The animal heat in fishes* is scarcely two and a half degrees beyond the temperature of the water they inhabit: they therefore rank among the cold blooded animals, in which the colour of the blood is less changed, and the temperature of their bodies less sensibly increased than in the warm blooded or higher orders. It is however necessary to remark, that the degree of intensity of the colour of the blood, and the vital heat emitted, bear little proportion to each other. The number of respirations made by fishes being between twenty and thirty per minute, the gills have evidently a less capacity for receiving the benefit of an extensive application of air than the lungs; and it follows that the animal heat from these united causes is necessarily reduced in fishes. (For a more copious detail of the source of animal heat see *Respiration in Quadrupeds*, p. 198.)

2821. *That fishes have urinary organs* was for some time considered as doubtful. Rondeletius was of opinion, that they were destitute both of kidneys and bladder; but the existence of both has been demonstrated by Willughby and others. In fishes, as in *Mammalia*, it is now well known that an excrementitious urinary fluid is separated from the blood by two kidneys (*h h*, *fig. 460.*), which are uniform in substance, of a reddish colour, long, narrow, and apparently united into one mass. A separate ureter empties the urine into a dilatation or bladder (*m*, *fig. 460.*). In the *Chondropterygii* they empty themselves at once into the common passage.

SUBJECT. I. Motive Organs of Fishes.

2822. *The organs of motion in fishes* may be considered as internal and external, both of which are particularly interesting, because, accustomed as we are to consider progression, and in fact any displacement of the body, as the operation of extended extremities acting on lengthened levers, with a marked preparatory effort, we cannot but look with wonder at the varied and instantaneous motions of the finny tribes, acting on a medium so little resisting as water, and with organs apparently so inefficient for the purpose. The internal motive organs are the muscles, whose contractions operate on the fins, which may be considered as the external organs of motion. The muscular fibre of which the muscles of fishes are composed is soft, gelatinous, and usually without much colour; hence it is either sparingly supplied with blood, or the red particles do not enter it. From this cause a deep incision into the sides of a fish lets out but little blood, but the smallest puncture of the gills causes profuse bleeding. The muscles of some fishes, as the salmon, are however red, particularly those about the head: in the lamprey, on the contrary, the muscles are of a dark grey. How then does this absence of red blood in the fleshy fibre of fishes, eminently gifted as they are with strength, become reconcilable with the doctrine which attributes force to the muscles of other animals in proportion as they are supplied with it? Thus in the eating of fish we meet with no stringy portions but such as are derived from the skinny expansions; yet we know, by the intensity and continuance of the exertions of these animals in a medium continually opposing resistance to their bodies, that a powerful force exists within them. To this we reply, that the muscular contractions which operate on the motions of fishes are principally dependent on a stimulus derived from the brain and nerves acting on another principle inherent in the muscles themselves called *irritability*, as that of the brain is called *nervous* influence. It is by nervous influence that a muscle, when cut out of the body, and thus totally separated from the brain and nerves, still retains its contractility, and shrinks from the irritation of pricking, elasticity, or eauterisation. It likewise appears that the duration and force of the property are increased by a sudden and violent separation from nervous influence, on which circumstance the use of crimping depends.

2823. *Crimping*, as we know, is a practice common with fishermen, who as soon as a fish is taken stun it with a violent blow on the head; and in order to act on the irritability and contractility of the muscles, they divide the fibres by deep transverse sections. This operation causes the muscular fibrillæ to contract into the smallest possible space, and thereby the fish becomes much firmer, and so remains for a considerable time; it is therefore an operation, which the angler who eats the fish he catches should be well acquainted with.

2824. *The air bladder of fishes* (*h*, fig. 460.), is very generally considered as an appendage to their motive organs; but the extent of its operations is disputed, and the phenomena attending its presence or absence are not calculated to reconcile all these differences of opinion. Dr. Needham supposed it to be a digestive organ, because it communicates with the alimentary canal. (*De Formato Fœtu*, ch. iv.) But the more general opinion entertained by naturalists is that it affords buoyancy; and it is deemed to be the analogue or rudiment of the lungs in higher animals. Popularly it is called the *air bag*, the *bladder*, or *swim*; and in the larger fishes, particularly the cod, it is known by the name of the *sound*.

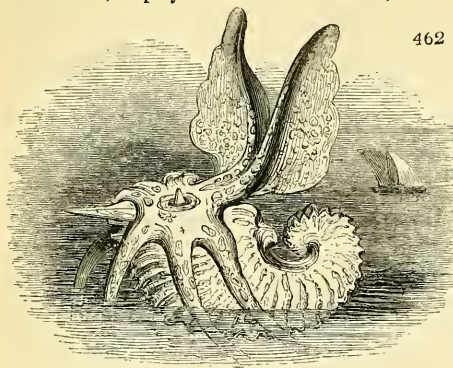
2825. *The external motive organs of these animals are the fins*, which, under the influence of the nerves, produce all the motions of fishes with an ease and rapidity that excite our admiration; while the peculiarity of their formation exhibits the care which has been taken to suit them to the varied sorts of motion most habitual to the endless varieties of the finny race. In the quiet and retired lake fish the fins are small, thin, and light; but in the pelagian tribes, which traverse wide seas and encounter raging tempests, they are observed to be massive and powerful. So great is the force with which these organs act, that, impelled by their muscular energies, the sword-fish is enabled to pierce through the copper sheathing and the massive wood-work of large ships; the salmon to force itself even through rapid cataracts, and to make the most surprising leaps: nor is there indeed any animal which can move from a state of rest with such velocity as fishes. In fact, the force of their operating muscles is more intense than at first sight is apparent; but when we remember that the trout, salmon, and other fishes, remain steadily for hours in one situation watching for prey, notwithstanding the action of powerful currents, some idea may be formed of its intensity. The shark accompanies ships on their voyages for many days, and as some allege even for weeks; and such is his rapidity of motion, that Cuvier says, were he capable of supporting the action for so long a period, he might traverse the globe in thirty days.

2826. *The number of the fins as motive organs* varies according to the genus, and even according to the species. It is difficult, therefore, to fix on those fins which exercise the greatest influence on the habits of the animal, as there is not any one fin common to all fishes, although all fishes have at least one of these organs more or less developed. The size of the fins is equally various in the different species, as it bears no constant proportion to the figure or magnitude of the fish, or to its habits or instincts.

2827. *The mechanical action of the fins* has been explained in a masterly and philosophical manner by Borelli in his celebrated work, *De Motu Animalium*. Dr. Paley in his *Natural Theology* has also illustrated it by a popular and interesting method:—"Fish," he writes, "have very nearly the same specific gravity with the element in which they move, therefore with them there is little or no weight to bear up: what is wanted is only an impulse sufficient to carry the body through a resisting medium, or to maintain the posture, or to support or restore the balance of the body, which is always the most unsteady when there is no weight to sink it. For these offices the fins are sufficiently large, though they are much smaller than wings, with which birds have been furnished for similar purposes: their action is mechanical; their position, and the muscles by which they are moved, are in the highest degree convenient. In most fish, besides the great fin, the tail, we find two pairs upon the sides, one or two upon the back, and one upon the belly, or rather between the belly and the tail. The balancing use of these organs is thus proved. Of the large-headed fish, if the pectoral fins (that is, the pair which is close behind the gills) be cut off, the head falls prone to the bottom; if the right pectoral fin only be cut off, the fish leans to that side; if the ventral fin on the same side be cut away, then it loses its equilibrium entirely. The pectoral, and more particularly the ventral, fins serve to raise and depress the fish: when the fish desires to have a retrograde motion, a stroke forward with the pectoral fin effectually produces it; if the fish desire to turn either way, a single blow with the tail the opposite way sends it round at once; if the tail strike both ways, the motion produced by the double lash is progressive, and enables the fish to dart forward with an astonishing velocity. When the tail is cut off, the fish loses all motion, and gives itself up to be borne wherever the water wills. The rest of the fins therefore, so far as respects motion, seem to be merely subsidiary to this."

2828. *Observations on the mechanism of fishes* and mollusks in all likelihood led to important results. The action of the fins probably first engendered the idea of oars to the savage, who having committed his person to the buoyancy of a plank, further secured the assistance of a propelling power by a paddle. To the plank succeeded a raft, and next a bark. In Egypt and Abyssinia these early barks were principally made of the Paper reed (*Cyperus papyrus*), which is confirmed by Diodorus Siculus, Strabo, Lucan, Pliny, and other ancient writers. Of vessels so formed frequent mention is made also in the Holy Scriptures. In these voyages our navigators possibly met with the most perfect of the molluscous sailors, the Paper Nautilus (*Argonauta Argo*, fig. 462.), when to their yet rude vessel they were further taught to add the means of increased celerity with diminished labour, with an additional facility in directing its course. In the wing-like membrane

said to be uplifted by this fair voyager, they caught the idea perhaps of sails. Two other of its arms, employed to direct its course, instructed them, so poets tell, in the use of a rudder; while the remainder, by their motion, led them to use oars also as an additional propelling power. From this poetic origin tall ships grew, and navies mayhap originated.



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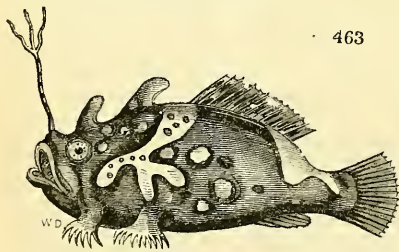
THE PAPER NAUTILUS (*Argonauta Argo*).

course; thus it voyages like some fair galley, and if alarmed, takes in water and descends." — (*Hist. Nat.* ix. 47.) The modern poet Pope alludes to the same popular belief in the lines —

"Learn of the little Nautilus to sail,
Bend the limp oar, and catch the driving gale."

And the feats of humbler *Crustacea*, which we have witnessed in the *aquarium*, make the story credible, though denied by most naturalists. — (See *Carpenter's Zoology*, vol. ii. p. 347. and *Dallas's Animal Kingdom*, p. 270.)

2830. *At any rate leaping* is practised by fish, as we know by the springs they make out of the water after flies. But the most extraordinary proof of this faculty is exhibited by the salmon, whose leaps to overcome the obstructing rocks or waterfalls, in his passage up rivers, are truly astonishing. The action of the flying-fish is but a *leap*, acting on the buoyancy of distended pectoral fins. Other fishes likewise, as the *Scorpena*, *Trigla*, and *Pegasus*, are endowed with this power. Climbing is also common to some, as the *Perca scandens*. Eels we well know to be endowed with this faculty: when they have surmounted a perpendicular obstruction, by opposing their own viscid surface to the surfaces of the matter to be passed up, they are then able, by tortuous wriggings, to advance to considerable distances in search of new locations; and it is thus that new-made ponds are sought out and stocked by them.



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LOPHIUS PICTUS (length, 9 inches).

2832. *The adhesive organ of fishes*, termed a sucker, may be considered as a borrowed organ of motion. Its situation is not always the same in species which possess it, being in some thoracic, and in others placed on the top of the head. In the *Remora* it is coronal and oval, consisting of transverse rows of cartilaginous plates, connected by one edge to the surface of the head, while the other edge is free and finely pectinated. A longitudinal partition divides the plates.

2833. *Electricity* is one of the most surprising phenomena connected with the organology of fishes. The torpedo (*Raia torpedo* Linn.) is an inhabitant of most seas, but is found larger and stronger in the Mediterranean than in most other seas. Its body is somewhat circular, perfectly smooth, slightly convex above, and marked along each side of the spine by several small pores or foramina: the colour of the upper surface is usually a pale reddish brown, sometimes marked by five large, equidistant, circular, dusky spots, with paler centres; the under surface is whitish or flesh coloured. The torpedo, however, is observed to vary considerably in the cast and intensity of its colours. The general length of this

2831. *The Painted Angler* (*Lophius pictus*), a small fish from the Tropics, kept in glass globes, is able to *walk*. M. Renard affirms that he knew an instance of an individual of this tribe (*L. anguis*) which having been kept out of water for three days, walked about the house in the manner of a dog. We were also informed by a naval officer, that, when on a voyage, one of these aquatic gentry proved a source of great entertainment to all on board. He used to walk about the deck after the manner of that just noticed.

fish seems to be about eighteen inches, or two feet, but it is occasionally found of far larger dimensions, specimens having been met with on our own coasts of the weight of fifty, sixty, and even eighty pounds. This electric fish has been celebrated both by ancients and moderns for its wonderful faculty of causing a sudden numbness, or painful sensation, in the limbs of those who touch or handle it. The electric phenomenon of the torpedo is commonly by ignorant persons ascribed to enchantment. Thus we are told by Oppian, that the torpedo, conscious of his latent faculty, when caught by a hook exerts it in such a manner that, sending it along the line and rod, it benumbs the astonished fisherman, and suddenly reduces him to a state of helpless stupefaction. There is a mixture of truth and fable in this account. "The real effect of the torpedo," says Mr. Walsh, "appears to be absolutely electrical, forming its circuit through the same conductors with electricity, and being intercepted by the same non-conductors as glass and sealing-wax." The galvanic or electric powers of the gymnotus, or electric eel, are however universally allowed to be even greater than those of the torpedo.

2834. *The exterior coverings of fishes* consist principally of the scales and skin. They have, it is true, various other appendages, but they are in most cases only prolongations of one or other of them under distinct names: an inner sensible layer, called true skin or *corium*; and an outer, known as *cuticle*. Between these is spread a mucous web, termed *rete mucosum*, of various tints, which, shining through the transparent scales and cuticle, gives to fishes their colour. The corium is thick in such fishes as have minute scales, but more thin and membranous when the scales are large.

2835. *The scales of fishes* exhibit the same varieties which mark the other organs. Instead of imbricated scales lying over each other, like the tiles of a house, with a fixed base, and the distal margin free, sometimes true osseous plates exist, which in the sturgeon are limpet shaped. The common stickleback is a familiar instance of one of the fishes furnished with movable spines; and the readiness with which the little gentleman bristles up his back has left a smarting impression on many an urchin who ensnared him with his bent pin and packthread. Among the diversities in scales may be noticed those of the large scaled carp, in which, while some are of the usual size, others are of extraordinary magnitude, mailing it in particular parts of the body. Scales are common to all fishes: eels, and some other fish, reputed to be destitute of them, are not so, but have them extremely minute. The scales of the eel are particularly noticed in our angling for that fish. Leuwenhock describes the scales of fishes as formed with surprising beauty and regularity, and as exhibiting an endless variety in external figure and contexture, observable not only in those taken from distinct sorts of fish, but even in those of the same fish.

2836. *The cirri of fishes* are appendicular prolongations of the skin of the head, the mouth, the throat, and other parts; the term is, however, principally applicable to those which project from the mouth, called by fishermen *wattles*, or *beard*, of which the barbel and carp are familiar instances. In some marine fish, as the *Silurus*, *Clarias*, *Polynemus*, &c. they are numerous, and are sometimes as long as the fish itself.

2837. *Fishes* are well known to be furnished with a slimy mucus over the exterior of the body, which serves to shield them from the abrading and penetrating influence of the water, and to enable them to elude the grasp of their enemies, as must be known to the angler in his attempts to hold them: it exudes from small pores in the scales, corresponding with openings, or ducts, in the skin underneath. It is the decomposition of this mucous albumen which gives to fishes that opaque filmy appearance when they have remained some time dead in the water; and it is the coagulation of this same matter which gives to the eel its whitened opaque look when dipped into boiling water. The lateral line, which extends along the sides of fishes, is a specialty *sui generis*, and has no analogy in animated nature, unless the lateral line of aerial spiracles in insects be considered as a feeble type. It is almost universally present, and is perhaps only wanting in the lamprey and a few others. It exhibits several striking peculiarities, varying in position and direction according to the species. It usually follows a course from the upper angle of the gills to the middle of the tail, thus dividing the lateral surfaces of the fish into two portions. In most sea fishes it inclines more towards the back, but in those inhabiting fresh water its inclination is rather towards the abdomen. The line is generally single, but in a few instances, as in the Sand Eel, it is double.

SECT. IV. *The Reproductive System in Fishes.*

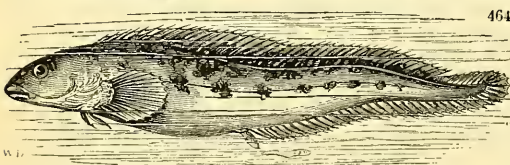
2838. *The breeding of fishes*, or their reproductive system, is a curious and important subject, both to the naturalist and economist; but, unfortunately, it is involved in great obscurity, arising not only from the retired habits of the animals, and the nature of the element in which they reside, but also from the diversities in the phenomena which characterise the process of reproduction itself in the different species. That philosophical zoologist, Dr. Fleming, divides fishes into two classes: those which have the sexes distinct, as in the oviparous, and those in which they are united. The first class is again divided into such

as have the impregnation external, and such as have it internal. The oviparous fishes are the most numerous, and the procreative act takes place in them after the ova are excluded. In other words, the *milt* and *spawner* commingle their several generative products to render them prolific. A social union appears to be formed between a male and female, who join in the search of a suitable place for the deposit of their spawn, which in the salmon genus is beneath sand or gravel. With other fishes it may be shed in the crevices of rocks, upon or under sea-weeds, &c. &c. In this great work the male joins as assiduously as the female, and the deposit being almost simultaneously made, and impregnation being thereby insured, all sympathetic union between these parents is said to be immediately and altogether dissolved; at all events, the progeny are no further objects of solicitude. We, however, appeal to the experience of every old and observant angler, if he has not remarked that in certain portions of most waters he has from time to time met with two fish of the same kind in the same spot, and usually unattended by any others, except among congregational fishes. We would particularly allude to jack, salmon, and trout, to which fish our present observations are principally confined. Yet this proves nothing positively.

2839. *The process of spawning in the salmon* is thus described in *The Book of the Salmon*, published by Messrs. Longman:—"The male and female salmon appear together on that part of a shallow in which their bed is to be dug, and they remain moving about upon it for a few days previously to nidification, which is performed by both of them dropping down the stream a little, and then returning with velocity towards the spot selected, they dart their heads into the gravel, burrowing with their snouts into it. This burrowing action, against and not across the stream, is performed by aid of the fins with great force, and, the water's current assisting, the upper part of the excavation is removed. The burrowing process is continued until the first nest is dug sufficiently capacious for a first deposition of ova. Then the female enters this first hollowed link of the bed, and deposits therein a portion of her ova. That done, she returns down stream, and the male instantly takes her place, and pouring, by emission, a certain quantity of milt over the deposited ova, impregnates them. The excavation and deposition of ova and milt are continued as long as there is any spawn to be emitted, and the making of the bed may extend from three to ten days, according to the quantity of spawn the fish possess, or the hardness or softness of the gravel in which the fish make their beds.

2840. *In favourable situations*, as early as the second day, the spot or germ within the ovum of many fishes becomes opaque. In four or five days a pulsatory motion may be observed in it, and in two or three days more the rudiments of the organs may be distinguished, as the spines, eyes, and tail. The form being now somewhat developed, the fins protrude:—first, the pectoral; next, the caudal; the dorsal, ventral, and anal follow in succession, and pursue this order of development. In ten or twelve days the ovum bursts, and the embryo springs into active life. This is not the case of salmon, where ova take from 100 to 140 days to be incubated. Temperature causes the difference.

2841. *Viviparous fishes, or fishes with the sexes distinct*, and with internal impregnation, are found principally among the *Chondropterygii*, or cartilaginous fishes: a few of the osseous tribes are also found in this division. The male organs in this class, particularly in the sharks and rays, present two large flat testes, each divided into two portions, one resembling the soft melt of the oviparous fishes, the other made up of small glandular portions. The female organs of the sharks and rays, which we may take as types of this class, are composed of two ovaria, each having an oviduct which dilates into the uterus. The period of the impregnation of the ovum, and the manner of it, are at present undetermined. In the viviparous blenny (fig. 464.) the young fish are seen escaping from the abdomen, and entering on a new scene, amidst innumerable enemies; and although the watchful mother guards and defends them, they nevertheless fall a sacrifice to numerous devastating foes around them.



VIVIPAROUS BLENNY.

2842. *Fishes with the sexes united* are not very common. Sir Everard Home however found, that in the lamprey the sexual organs of both kinds are always present in the same individual. Having been unsuccessful in obtaining any male lampreys, although he got what were considered females in plenty, he began to suspect that the individuals of this species were all hermaphrodites, and his observations justified his conjectures. The anatomical specialities of these organs in this fish are detailed in *Phil. Trans.* 1815, part ii. p. 266.

SUBJECT. 1. *The Fecundity of Fishes.*

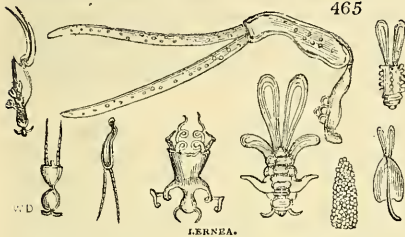
2843. *The fecundity of fishes* is a more curious phenomenon than any of those which are observed in their economy. In some this faculty is so extreme as to produce astonishment; and again in others it is confined to a few, perhaps to one or two only. By a wise and beneficent regulation in Nature, the voracious and non-edible tribes are among those of but little fecundity, otherwise the depths of the ocean would become a common grave for all the living; and our shores would be fatal to all who approached their limits. Happily, on the contrary, the cod, the herring, the sturgeon, &c. &c. pour in gregarious myriads, and supply us with the blessings of a food, at once valuable and easy of attainment. Thus it is that the prolific powers of fishes have occupied the attention of many naturalists, but perhaps to

none are we more indebted than to Mr. Harmer, for the extent and profundity of his researches into this important subject; and we regret that our circumscribed limits forbid our transferring them to our pages.

2844. *Fishes are subject to diseases both in a natural and domesticated state. The extremes of temperature affect them; and thus in ponds they sometimes die when the heat is excessive. The rigours of winter are still more fatal, particularly in shallow waters. Occasionally an epidemic mortality prevails among them, apparently dependent on cold. A description of such a disease will be found in the Journal Physique for November 1789, at which period the inhabitants of some districts lost nearly all their stock of carp, pike, and trout.*

2845. *Internal parasitic animals may be ranked among the causes of disease in fishes, as they prove not only troublesome and injurious, but sometimes even destructive. Linnæus has given a formidable list, which has been arranged more systematically, and somewhat augmented, by the acumen and industry of subsequent naturalists, as Pallas, Müller, Lamarck, and Latreille.*

2846. *The external parasitic animals which attach themselves to fishes are of various kinds, as fig. 465., which exhibits several, will show: they are, as will be seen, of very different forms. These parasites are, the *Lerneæ*, *Monoculus*, and *Oniscus*, of Linnæus; and the *Cecrops*, *Pandarus*, and *Anthosoma*, of subsequent naturalists.*



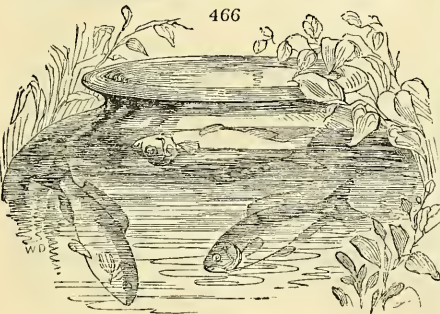
2847. *Lerneæ*, fish-louse, or fish-biter tribe, are molluscous blind-worms, with a naked body, often oblong and cylindrical, having three or four tentacula, with which they fix themselves closely to the skin and other parts of fishes. The forms of these *lerneæ* are so varied, that it is hardly possible to offer a graphic type of the whole.

The *Lerneæ Salmonia* is rendered peculiarly interesting by its notoriety. It is this fish-louse which fixes itself on the gills of salmon, and commits the ravages sometimes seen there. The *Monoculus Piscinus* is as indigenous to the salt waters as the *Lerneæ Salmonia* is to the fresh; hence, though the salmon on leaving the sea speedily gets rid of these, he is soon attacked by a foe more inveterate, the *lerneæ*, or maggot as it is called by the fishermen of the North. When these fix on the gills they erode and do much injury, and it is not improbable that the eagerness to get rid of them may stimulate the salmon's return to the sea, which immediately destroys the *lerneæ*, and repairs the evils it has caused.

2848. *The Lerneæ Cyprinacea* is also not uninteresting to the angler, from its general diffusion throughout almost the whole of the carp genus. It may be observed, with its cylindrical body and four tentacula, adhering to them, particularly when the fish are out of season. *Lerneæ Trutta* also frequently comes under the fly-fisher's notice, and is not an uncommon cause of spoiling his sport, particularly in the spring. At which time it is not unusual, after having hooked a large trout, to find him a dead weight, affording no sport, but yielding up his life without a struggle. In such case, when the captive is taken out he is usually found to be partially covered with the *Lerneæ Trutta*, or trout-lice, to which the defective condition of the fish is to be attributed, although it is not improbable they are more a consequence than a cause of disease. We must, however, conclude this notice, with barely mentioning the *tænia*, a well known cause of disease in fishes, and also the *fasciola*.

2849. *The tænia* is probably in the first degree hurtful to fishes, and the *fasciola* in the next. A periodical affection of the eyes also occurs to some fishes, of which the mackerel is an instance, and has been thought to be dependent on a winter hybernation in the mud. But although we do not altogether deny this as a cause, yet, as we are inclined to think the cuticle or outer skin of most fishes to be deciduous (in some cases we know the scales are so likewise), may not the temporary blindness with which they are sometimes affected be in some way connected with this annual decortication, in which the eyes, being covered with cuticle must participate by becoming disorganised and opaque?

2850. *The phenomena attending death in fishes.* Mr. White of Selborne thus graphically and accurately observes on the manner in which fishes die in



their own element:—"So soon as the creature sickens, the head sinks lower and lower, and it stands, as it were, upon it; until getting weaker, and losing all poise, the tail turns over, and at last he swims on the surface of the water with the belly upwards (fig. 466-). The reason why fishes, when dead, float in that manner, is very obvious, because when the body is no longer balanced by the fins of the belly, the broad muscular back preponderates by its own gravity, and turns the belly uppermost, as lighter, from its being a cavity, and because it contains the swimming bladder which contributes to render it buoyant." Dying, as an act produced by removal from water, is brought about in a longer or shorter period, by the absence of air in the blood. It was long ago observed by Rondeletius, that those fish whose respiratory organs (the gills) were imperfectly covered by opercle, expired quicker than those whose gill-lid more completely closed the external communication: from which it is proved that the air, to produce its aerating qualities, must be extracted from the water itself. It is doubtless chemically elaborated

through that medium, and that medium only, will suit the immediate wants of fish blood. The gasping

of a fish in dying is an effort to draw in water to separate air from it, although surrounded with a superabundance of that element. The herring, as we have said, dies immediately on its removal from the water. Is not this sudden death the consequence of some electric effect received by its sudden admission into atmospheric air? Decomposition also in the herring begins almost immediately after death; the scales come off quickly, and in an hour or two it is unfit to salt. This early decomposition is in unison with what happens from an electric death: and the phenomenon of parting with life by one momentary effort, in which a slight snap only is heard, also accords with the same consequences.

CHAP. II.

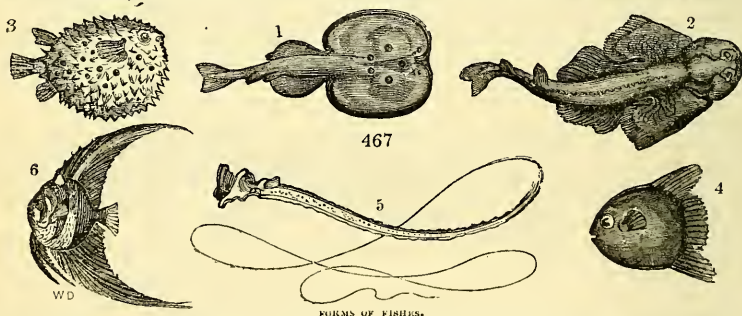
THE POPULAR HISTORY OF FISHES.

2851. *A popular history of fishes* will comprehend their exterior form, their obvious division into salt and fresh water tribes, their geographical distribution, migrations, hibernations, their food, and the methods of taking them, including those practised in the national fisheries, and the uses to which mankind apply them. Our present limits preclude any display of the subject beyond a brief notice: we however think it necessary to premise, that in every portion of our work we shall take the liberty of using the terms *fishes* or *fish* at discretion, as we conceive them occasionally most applicable or most accordant with the language generally employed by readers at large, and by sportsmen in particular; and this we shall do without reference to the propriety or impropriety of the same noun being used in both a singular and plural sense.

SECT. I. *The exterior Form, popular Divisions, Habits, Manners, &c. of Fishes.*

2852. *These several subjects* are individually important, and were we not confined in our limits, we might treat at large on each subject; but as it is, we can but glance at them more cursorily than we could wish.

2853. *The exterior form of the body in fishes* is infinitely varied. These forms present themselves as compressed, depressed, oblong, orbicular, oval, gibbous, pentagonal, &c. By far the greater number, however, are of a long oval figure, with a pointed head, and some gibbosity towards the shoulders, whence the body usually tapers to the tail, thus altogether presenting a figure calculated to offer the least resistance to its motions through the water. That such an outline is not, however, essential to the progression of fishes, is evident from the great occasional departure from it which we meet with among them, and which renders them apparently but ill calculated, on mechanical principles, for locomotion. The ray and turbot, for instance, exhibit figures not apparently well adapted for rapid movements; still less so the torpedo. But Nature will not be circumscribed within any limits ordained by feeble man. We have, however, in *fig. 467.* offered a few exemplifi-



cations of anomalous conformation in fishes. The torpedo (No. 1.) might be considered as not well calculated to make his "way in the world," by his swimming or by his beauty. In the same predicament we must regard the angel-fish (No. 2.), concluding that Nature will not be frustrated in her intentions; but, on the contrary, has in such instances so modified her mechanics that some fishes, like some horses, are able "to go any how." The round dion (No. 3.), with his circumscribed fins, if he cannot kick up his heels, yet manages his minute oars as dextrously and effectively as the "jolly young waterman feathers" his more extended ones. The figure of the short sunfish (No. 4.) is equally calculated to excite our surprise and admiration, when it is known that this almost shapeless mass is agile in the extreme. In the cordated stylephorus (No. 5.), on the contrary, we are struck with the extreme length and tenuity manifested throughout its form. We shall, however, conclude with No. 6., which represents the long finned chaetodon, whose figure must be considered as anomalous as the rest.

2854. *The popular definitions of the form and structure of fishes* have, however, been subjected to classification and general notation. Thus they are said to be *compressed*, when

the diameter from side to side is less than from back to belly; *depressed*, when the diameter from side to side is greater than from back to belly; *orbicular*, when the longitudinal and transverse diameters are nearly equal; *oblong*, when the longitudinal exceeds the transverse diameter; *oval*, when the base is likewise circular; and *gibbous*, when the back presents one or more protuberances. The extreme lines may also be *carinate*, *ensiform*, *cuneiform*, or wedge-shaped, &c. The surface of the body is called *naked* when it is smooth and without apparent scales; but when these are present it is said to be *scaly*. When the scales are without angles the surface is said to be *smooth*. Most fish are *lubricated* with an albuminous mucus; some are *tuberculated*, having hard risings; others are *loricated*, or *mailed*, when encased in an impenetrable integumental covering; and *fasciate*, or *banded*, when marked with zones from the back to the belly.

2855. *A popular division of the body may be made into head, trunk, and tail. The anterior extremity, or head, is more or less pointed; the snout is usually protuberant, sometimes nearly absorbed. The snout in the salmon is seen recurved; in the swordfish lengthened out into a pointed lance-shape; and in the rostrate chætonodon it terminates in a tubular or pipe-like projection. The trunk is variously characterised: the abdomen is at one time carinated, at others acute; sometimes the scales forming the carinae are formed like the teeth of a saw, when it is said to be serrated. The tail is sometimes round, as in the lamprey; carinated, when it has a sharp angle; mucronated, when beset with spines; apterygious, when destitute of fins; dipterygious, when the fin is divided at the base. These terms being definite and conventional among naturalists, and well-informed anglers also, we have introduced them as a useful guide even to the more popular descriptions of fishes. The want of precise nomination is severely felt in all zoological detail, because it leads to much ambiguity.*

2856. *Fishes may be obviously divided into such as exclusively inhabit the sea and salt-water lakes, those which are found only in fresh waters, and such as are capable of residing in both. The fishes which can live in salt waters only are infinitely more numerous, and far more varied in external figure than those found in fresh waters. The vital phenomena of the two must vary somewhat; but the eye of the anatomist has failed to detect any specialty purposely destined to render life in either salt water or fresh necessary to their existence. Commensurate with the vastness of the ocean is the relative bulk of many of its inhabitants; and their powers are equally great with their corporeal frames. The hippopotamus and the crocodile, the huge tyrants of the fresh waters, are but pigmies compared with the monstrous cetaceous tribes. In point also of economical importance, sea fishes rank beyond all comparison above those of fresh water. The localities of sea fish correspond with their habits, powers, and the nature of their food: some are found only in the open ocean, and in vast seas — hence they are called *pelagic*; others principally frequent the shores, and are termed *littoral*; some affect rocky situations; some weedy, and others sandy spots. The surface, or near it, is the principal rendezvous of some tribes, and the profoundest depths that of others. Tideways, currents, and the larger estuaries, are observed to be favourite situations with great numbers of species.*

2857. *The fishes which exclusively inhabit fresh waters are, as already observed, of little value to the economist compared with those of the salt water: but on the other hand to the angler, to whose purposes our labours are principally subservient, they far outweigh in importance all the inhabitants of the deep. The principal members of this division are, as they affect European anglers, salmon, trout, gwyniad, grayling, charr, pike, perch, ruff or pope, tench, carp, chub, rudd, bream, roach, dace, gudgeon, bleak, minnow, loach, bull-head, and stickleback. It is supposed that this list might be greatly increased by the industry of man, and facts go to prove that many kinds of salt water fish are easily brought to live in fresh water. Dr. Macculloch informs us, that this capability has been long known in Sicily, particularly with regard to the *cefalo*, a species of mullet. Whenever these are taken from the sea by the fishermen, they are thrown into the fresh water lake Lentini, where they are kept for use, and where they increase in size, and improve in flavour: it is to be observed that this lake has no communication with the sea.*

2858. *The capability of some fish to live indifferently in salt or fresh water, has suggested the attempt to naturalise many more. The Hon. Daines Barrington gives evidence that the smelt and grey mullet have been found to live and thrive in fresh water lakes. (Phil. Trans. p. 312.) Salmon, it is also known, can be kept alive; and, it is said, have remained healthy in occasional instances when prevented from returning to the sea. We are likewise informed in the Statistical Account of the Parish of Lisman, vol. i. p. 485. that about fifty or sixty years ago, there were some sea trouts carried to their fresh water lakes, the breed of which preserves their distinction perfectly clear to this day: they retain their shining silver scales, though they have no communication with the sea; their flesh is as red as any salmon, and their taste is totally different from that of the yellow trout.*

2859. *The fishes which inhabit both salt and fresh waters are, salmon, the varieties of sea trout, the eel, the smelt, the flounder, the mullet, the shad, the barbel (partially), and the Roman muræna. These are commonly known as gifted with this property: it is however probable, that the list will be considerably augmented by future discoveries. The pike, it is now ascertained, will live and thrive in brackish water; the silure, the largest river fish known, will do the same; and a fish common to the Italian rivers, called the zerte, which is a species of *Cyprinus*, described by Gesner under the name *Copito Anodromus*,*

is found both in the fresh waters and the sea. Perch also have been washed by floods into the large estuaries, where they have not suffered by the removal. Carp likewise have proved themselves equal to the change to salt from more than brackish water; and we think it probable, that here are few fish that might not be gradually accustomed to the removal from one to the other. Between some few, however, it is probable that an inseparable line of distinction is drawn by Nature. In their migrations from the fresh to the salt waters and back again, fishes appear to be influenced by various instinctive impulses. In most of them, however, the migration from the salt water to the fresh has one leading principle; and, even in the instance of the eel, this motive is to find a convenient spot in which to produce their young. This being done, the parent fishes seek to return to their feeding element, where alone they can hope to regain their flesh and recruit their strength. In nearly all these cases fish migrate to the sea for the purpose of obtaining abundance of nutritious food in the shape of small fish, sea insects, &c. The salmon, on an average, remains but two months at sea, and passes the remainder of the year in some part or other of its native stream, whither it returns for the main object of propagating its species. Much error has been propagated relative to the migration of eels; some undoubtedly breed in the sea, others in fresh water. The eel, as has been contended, is not viviparous, but spawns like other fish, which has been proved by Mr. Andrew Young of Invershin, Sutherlandshire. We shall, in another place, have occasion to revert to the probability of modifying, to a permanent residence in fresh water, the constitution of a greater number of marine fishes than at present is supposed capable of such change. It may, however be here remarked, that it is most likely to succeed with such fish as, by frequenting our estuaries, may be supposed to be already able to support, in a degree, a privation of that which gives to salt water its particular properties. Certain it is that the fatal consequences resulting from a change of situation from either the salt to the fresh, or from the fresh to the salt waters, are by no means the same in the periods at which they take place in different species; and this consideration might lead to a hope, that those fishes on which the change operates by more slow and less violent degrees, might be brought eventually to survive such alteration. It is evident that a long course of patient investigation, with numerous experiments on a large scale, is required to determine a question so curious to the naturalist, and so important to the economist.

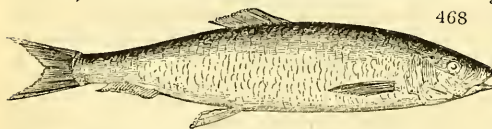
SUBJECT 1. *Fishes as Gregarious or Solitary.*

2860. *Gregarious fishes* are inhabitants of rivers and lakes, as well as of seas and oceans. By congregating, fishes perchance hope to escape their enemies; and by their condensation in shoals, they may also somewhat increase their temperature. The sturgeon, cod, ling, haddock, herring, pilchard, and smelt, are striking examples of gregarious marine fishes. Most fresh-water fish congregate in larger or smaller communities; some, as gudgeons and minnows, flock together in vast shoals. Among the gregarious fresh-water tribes we may notice the minute stickleback, whose numbers in particular seasons are so great, that they are sold by the bushel for manuring the land. Most of the insectivorous fishes, as roach, dace, and chub, are usually found united in small or large communities, according to their means of space and food. Carp and tench have a disposition to associate together, and the perch is so perfectly gregarious, that if one be taken the rest also are sometimes secured.

2861. *Solitary fishes* are perhaps rendered so more by compulsion than choice, most animals having an instinctive disposition to associate for safety against their enemies. This necessity is however not felt in those whose powers and habits fit them rather for offence than defence: on the contrary, seclusion to them is necessary, as otherwise constant competition would defeat its own purposes; and while the voracious were quarrelling for the spoil, the destined victim would escape.

SUBJECT 2. *Migration of Fishes.*

2862. *The travelling propensity in fishes* is of great importance to mankind in general, so much so, that we have headed our subsection with the figure of the herring, one of the most



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468 important of these wanderers. It is by these and other finny migrators that the blessings of a fish diet, in superabundance, are periodically bestowed on shores remote from each other. If such fishes were constant residents on any one spot, we might feed on them to satiety; but by a temporary deprivation we learn to estimate the value of the visit, to appropriate its benefits, and to hope for its return. In the migration of fish, the economist is not the only one interested: the philosopher also contemplates it with eagerness; and the naturalist, comparing its phenomena with the wanderings of other tribes of the animal creation, observes the same wants, the same instincts, and similar impulses, acting throughout. Fishes, like birds, are capable of traversing immense distances; but, unlike them, affect very different temperatures, and subsist on very diversified food. Thus the herring, which is thought to choose the coldest spots in winter, seeks the hottest situations in summer. These migrations of fish are

partial or extensive: the salmon, the sea trout, &c. merely move from the neighbouring seas into their natal rivers; while other marine fishes, inhabitants of our seas, only leave the deeps to approach the shore during the summer months, thus changing a pelagic for a littoral character. The herring, the pilchard, &c. on the contrary, it is thought, resort during the winter to remote and frigid seas; and, as spring advances, they retrace vast distances to visit warmer situations. These migratory propensities are partly voluntary, and partly the consequence of an invincible, instinctive impulse, dictated by various necessities, as the search for food, a change of temperature, or the multiplication of their offspring.

2863. *Great irregularity attends the migratory movements of fishes*: unlike, in this respect, those of birds, they appear regulated by circumstances beyond our comprehension. Thus haddocks, in vast shoals, visit our Yorkshire coast annually about the middle of December for many years together; suddenly they disappear for a few seasons, and then resume their yearly visit. The mullet is also an instance of this deviation from rule. In July, 1804, the red mullet visited the mouth of the Ex in such numbers, that they were sold for sixpence per dozen; for some years before not one had been taken on the coast. That the herring is influenced by this seeming caprice is evident from the fact, that its myriads altogether desert their former resorts, never more to return. Thus, until the middle of the sixteenth century, the great bank for herrings was along the coasts of Norway; but since that time that coast has been deserted by them for our own shores. At Allanby in Cumberland, the herring is found to pay its visits during ten consecutive years; then, for ten years more, to abandon the channel; and these revolutions are performed with perfect regularity; and we, benefiting by them as we do, watch their approach with extreme anxiety, and send out vessels innumerable (see fig. 470, p. 954.) to greet their arrival, and to introduce these our benefactors to a grateful public. Neither man, nor their still more destructive foe the finfish, or the cachelot, dares to pursue them in the highest latitudes, where the quantity of insect food which these seas supply is very great; and in that remote situation, defended by the icy rigour of the climate, they live at ease, multiply almost beyond idea, and are safe from the pursuit of their enemies.

2864. *The cod also migrates from the northern seas, and spreads its valuable masses at stated periods along the coasts of Europe and America*; numbers are, however, indigenous to Britain, and remain perpetually in our seas. The *hake* appears to have two periods of appearing on the British shores, an early and a later one, the first of which visits is probably in pursuit of herrings. The *mackerel* at stated seasons swarms on the European and American coasts, and then retires, it is supposed, to the polar seas. The *tunny*, a large variety of the mackerel, enters the Mediterranean about the vernal equinox, in a triangular phalanx, of which the point cuts the water, while an extensive base is presented for the tide and currents to act against and impel forward. *Eels*, like salmon, &c., make periodical migrations from the salt to the fresh waters, and *vice versa*: some of them not seeking the shallows of rivers to deposit their spawn, retire for that purpose, as has been already stated, to the sea; and their young, soon after hatching, are seen in myriads running up the streams to naturalise themselves in the fresh water.

2865. *Fishes appear to hibernate*; but on this subject we have much to learn, though facts are already known which afford a strong presumption that such is the case. That many congregating fish imbed themselves in the muddy bottoms of deep seas, or beneath the thick crusts of ice in polar oceans, seem well established facts. Eels, it is well known, betake themselves to the mud in severe weather, remaining in a state of torpor, clustering round each other, or nestling under weeds, straw, or any other matter which affords them shelter and protection from the cold. The carp also, there is reason to believe, retreats occasionally to the bottoms of deep ponds, where it has been found with the head imbedded in the mud, to shelter and protect it from cold.

SECT. II. *The Food of Fishes.*

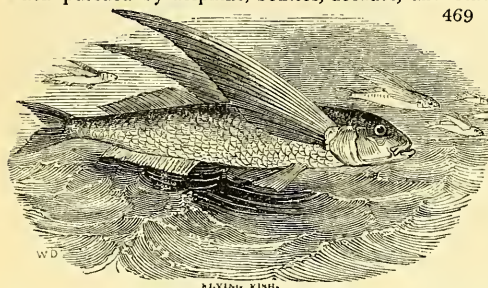
2866. *The food of fishes*, like that of other animals, is various: some are principally supported by animal substance in mass, and may thence be termed *carnivorous*. Of these there are two kinds; those predatory tribes which subsist only on living fish which they catch themselves, and those which will take any animal matter, living or dead, of which the shark, mackerel, cod, and flat fish, are instances. A third class principally live on *Mollusca* and *Crustacea*, and are furnished with organs expressly adapted to such sustenance. Great numbers are *insectivorous*, being principally nourished by aquatic insects. Others again are *phytophagous*, or eaters of vegetable matters. *Algae* and *fuci* form the principal food of some marine fishes. Succulent water plants we know to be likewise necessary for some fresh-water fish. It is a curious fact also, that while some seals are purely carnivorous, others are truly phytophagous; but the largest portion may be considered as *omnivorous*, using at times all these substances as food indifferently. Some of those members which occupy a distinguished place in the angler's catalogue, seem likewise to lay claim to the title of *graminivorous*, for wheat, barley, and all the farinæ are devoured by them with avidity. Bread in all its forms is a tempting food; and this alone is a sufficient refutation of an opinion prevalent with some, that they mistake grain in its solid state for the larvae of insects. Ground baits also, the base of which is commonly farinaceous, is another proof of this.

2867. *Fishes, like birds, seek an almost constant supply of food*; but, unlike them, they can abstain from it for a long time, resembling, in this particular, the other cold-blooded animals. Under some circumstances abstinence is *voluntary*, as during the spawning season, when most fishes are observed, some partially and others wholly, to refrain from eating. During particular states of the atmosphere, fish are disinclined to take food, as when it is highly charged with electric matter. This is well known to the fly-fisher, who finds it vain to tempt the trout if a thunder cloud hangs over his head; or if there have been a frost, and the wind be in the east it is with little chance of success that the "bottom-fisher" presents the well-scoured worm. The capability of abstaining from food in fishes is a physical property regulated by necessity. Pike, voracious as they are, can live in a pond in solitude without any apparent prey, certainly without any of the flesh kind. Gold and silver fishes, it is well known, are kept for a considerable length of time on river water alone.

2868. *The voracity of fishes* is as remarkable as their abstinence; and although there are degrees of difference among them, yet the quality may be considered as common to all. In our rivers the pike forms the most prominent example; and it is in consequence of this quality that the troller finds him so easy a prey. This tyrant of the fresh waters has been known to gorge a hundred roaches in three days; and yet he can fast from animal matter for months. The other fresh-water tribes, though more dainty in their choice of food, have a similar disposition to predatory warfare on each other, and if less insatiate, are equally sanguinary, preying on those around them without mercy. But to view this voracity in its most striking aspect, we should direct our attention to the ocean, the all-devouring ocean as it has been truly called, not only with reference

to its own havoc on human life, but equally so with reference to the general character of its inhabitants. The *Squalus*, or shark genus, is voracious to a proverb. For days and weeks a shark will accompany a ship on its voyage, allured probably by the effluvia of animal matter. Whatever is thrown overboard is greedily devoured; and even the hapless sailor who becomes its prey, makes but one meal for its all-receiving stomach. Rapacity is universally at work from the least to the greatest. The smaller fishes subsist on the spawn of others, or pursue the tiny fry; these, likewise, are preyed on by the haddock, whiting, &c., which in their turn become food for the cod, that again, when thus satiated, is destined to fill the jaws of the shark, or some other glutton. In the midst of this acknowledged voracity in fishes, their capability of subsisting on water alone finds many advocates, and among others Mr. Daniel, who grounds his arguments on the constant absence of food from the stomach, that of the herring being always empty when caught. But having already fully entered on a consideration of this subject, when describing the anatomy of the digestive organs of fishes, we need add nothing in refutation of the capability of these animals wholly and permanently to support themselves without solid food. They have undoubtedly strong powers for long abstinence from such nutriment; but it is contrary to the analogies of Nature, and inconsistent with the existing phenomena of the alimentary canal of the herring as well as of salmon, which are exactly in the same predicament, to suppose that water alone supplies the permanent wants of these or of any other classes of fish.

2869. *The flying fish (Exocoetus volitans)* is furnished with organs purely defensive. When pursued by dolphins, bonitos, dorados, and other fishes of prey, it leaps from the



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469 it repeats its flight. Captain G. Tobin, whose opportunities of observing this fish were considerable, thus describes it: — "The lower half of the tail in the flying fish is full twice the length of the upper: the use of it has always appeared evident to me. I have by the hour watched the dolphins and bonitos in pursuit of them; when, without wholly immersing themselves, which would have proved fatal to them, they have disposed in their progressive motion the lower part of the tail in such a manner as to supply their wings with moisture, and thus to support them above the surface. I never saw one exceed the distance of a hundred yards in its flight, without being obliged to dip for a fresh supply." The species so common in the Mediterranean, we are informed by Shaw, is sometimes seen singly, and sometimes in small shoals. Instances are not unfrequent of its falling into ships during the decline of its flight. It is considered an agreeable fish for the table, and by some is even preferred to the herring. The general height to which it is observed to take its flight is about three feet above the surface of the water. The structural description of this extraordinary tribe of fishes is more fully detailed in the anatomical accounts of the fish organs (p. 943.), where another species of these singularly-gifted animals is described.

2870. *The duration of life in fishes* is known to be considerable. It may be said to exceed that of most other animals. Gesner insists strongly on this point; but it does not appear to have been the opinion of the ancients. Pliny allows only two years as the life of the tunny, a fish which frequently weighs a hundred pounds: — *Vitis Thynnus longissima biennio.* (*Plin. Hist. Anim.*) We might, without further proof, attribute longevity to fishes on a mere consideration of the peculiar circumstances in which they are placed: the medium they inhabit is but little variable in temperature, their supply of food seldom fails, and their haunts usually afford them protection from danger. A structural examination of fishes still more plainly evinces their capacity for long life. The very base of the fabric, which in other animals becomes rigid and incapable of extension soon after puberty, is in them originally composed of a mixture of bone and cartilage, which keeps it ever pliant and capable of extension or growth; and so slow is the process of ossification in them, that even the longevity which some are known to attain, is not attended with the rigidity or decrepitude of land animals. But that which would more particularly lead us, *a priori*, to suppose them long lived, is the protracted period of their adult or mature state: their puberty bears no relation to this. A fish destined to grow to the length of thirty inches will procreate when it has reached one-third of this length; and though its life should be extended to forty or fifty years, its sexual powers may commence at the second or third year. It was by this fallacious view, that the ancients were led to form such an erroneous opinion of their pubescence.

2871. *Much has been asserted, pro and con,* on the capability of individual fishes to attain extraordinary dimensions. In a pond near Radnor Forest, the property of the Earl of Essex, which had been stocked fifty-eight years, a hundred brace of carp were taken out, each weighing from fourteen to fifteen pounds. The regularity of these dimensions is a full rebutment to the argument, that enormous fish are monstrosities; and that such growth is a speciality, and is not congenuous. From Gattin Park a brace of carp was taken which weighed thirty-five pounds. Mr. Pennant speaks of a single one which weighed twenty pounds. In the Thames roach used to be taken which were nearly three pounds in weight; and mention is made of a monster which had reached five pounds. From a pond near Radnor Forest some eels were taken, one of which weighed eight pounds; and indeed eels (undoubtedly not congers) have been taken of fifteen pounds' weight. It is recorded that in January, 1825, two extraordinary eels were picked up on the saltings on the east coast, which were considered by persons supposed to be competent judges, to be the true fresh-water silver eel (*M. Anguilla*), one of which weighed sixty-two pounds, the other fifty-seven pounds. It is, however, most probable that these were congers.

2872. *Of the sizes and weights to which pike have attained* we have numerous accounts. Colonel Thornton informs us that in Loch Alva he took a pike which wanted only two ounces to weigh fifty pounds: a plate of that fish is made public. The *County Chronicle* gives an account of a pike taken in June, 1822, from a

pond at Chillerton near Brewood, Staffordshire, the seat of C.J. Giffard, Esq., which measured from head to tail four feet three inches, and weighed forty-six pounds. Within it was a trout of four pounds and a half, and a mole, which the gormandiser was devouring when taken. From Munden Hall Fleet a putrid pike, killed by a late frost, was taken, which then weighed forty-two pounds; and from the Lewes river the gamekeeper of—Shillner, Esq. of Combe, extracted a dead pike which had become jammed between a willow stump and a bank, and which in its wasted state weighed forty pounds. Visitors to the royal ponds at Marly were shown fishes which had been in existence in the time of Francis the First, and had become remarkably tame. These Nestors had been individually known to all the attendants in succession, who had taken care of them from that time to the present: their size is immense, and their vigour is unabated. The enormous gold and silver fishes in the royal gardens at Rouen cannot have escaped notice: these, we were informed by one of the garden keepers, had existed with little alteration, either in size or appearance, within the memory of man. The records of history, apparently well authenticated, contain accounts of carp which have existed two hundred years; and mention is made of a pike two hundred and sixty years old. It would be very satisfactory if these facts were fully authenticated. It is unfair to those by whom they have been asserted to discredit them on mere supposition; nor is it much less fair towards ourselves to receive them without authentication.

SECT. III. *The Dietetical Uses of Fishes.*

2873. *The edible qualities of fishes* render them most important to mankind: tens of thousands live wholly on a fish diet, hundreds of thousands are mainly fed by their means, and millions are under obligations to them for a part of their nutriment. They form at once the support of the poor and the luxury of the rich; and they appear to have been in all ages a favourite food of man. The Scriptures abound with examples of this kind, and profane history is equally replete with proofs of the industry employed in the search after edible fishes. If it be alleged that it was to the confined range of science in those times that they were so much in use, we reply that, although cultivation has augmented the resources of man, yet that which might have been forced on him formerly by necessity, is still received with undiminished avidity as a convenience or a luxury. Among aboriginal nations and tribes, fish as an edible naturally presented itself as a ready means of satisfying their wants. Little preparation and no culture were required; the animals bred and thrived within reach of man in his rudest state, and their unwariness rendered them an easy prey. Fish is therefore found to form the principal diet of most savage nations in countries bordering on the sea. In northern climes, particularly, the sterile nature of the country provides little save fish for the support of the inhabitants. The Greenlander and the Esquimaux of Labrador, placed in a region of eternal snow and ice, finding few articles of human sustenance, are almost wholly supported by the seal, the whale, and the reindeer, but more particularly by the former, which is as valuable as the cocoa nut to the Indian, or as sheep and oxen to ourselves: almost all their wants are supplied by it, and the extra quantity is bartered for a few superfluities obtained of the factor. With the skin and entrails they sew their garments; of the same materials they make their windows and their tent curtains; and its bones furnish them with fishing spears, harpoons, and hooks.

2874. *Seal hunting is therefore the most early and continued pursuit of this people; and to excel in that, constitutes their distinguishing mark of superiority.* The blood of the animal is their drink, the flesh their food, the subcutaneous substratum of fat illumines their subterraneous dwellings, and at once furnishes them with light and heat. In Lapland, also, fish are very important to the wretched inhabitants. The *Gadus Callaris* of Linneus, a species of cod, is frozen by them in vast quantities for their winter consumption; and the arctic salmon, under the name of *angmarset*, is dried and powdered, and then formed into bread, either alone, or in mixture with some farinaceous matter. Their fish bones ground into powder are used in forming a kind of coarser bread for their own and their cattle's consumption. In the South Sea Islands fish likewise forms the principal article of sustenance. Their enormous crayfish are also of extreme importance to them, being in great plenty, and easily obtained.

2875. *The rude modes of catching fish*, and the implements employed among the early inhabitants of the world, were plain and simple in the extreme; and where civilisation has not yet extended its benefit, they still remain so. Experience, has, however, taught some uncivilised tribes to practise their arts of capture with considerable dexterity; and has enabled them to manufacture from their limited resources very ingenious implements for the purpose. Others, however, whose mental development is deplorably restricted, still exhibit in these arts nearly the whole of their aboriginal rudeness. The natives of New South Wales display signal instances of the slow progress of reason and intellect. An inspection of their instruments, and a knowledge of their modes of using them, would, without due consideration, excite wonder how they ever succeeded in their endeavours to take fish. Our observation, however, teaches us that the animals around us adapt their resistance to the artifices employed to take them. Every experienced angler knows, that to catch fish in the Thames or the sea, or in fact in any much *fished water*, the best artificial tackle must be used, and that the manner must demand at least as much skill as the matter. In a stream little frequented, on the contrary, the fish hurry as it were into the snare, and strive who shall first take the new bait. An old trout in an oft-frequented river will become so wary as to elude for many seasons every attempt to take him, though diversified by worm, fly, and minnow, and shall perhaps at last only fall a sacrifice to an unsportsman-like death by the net. Such a one, in our early fishing days, we remember at Hampton, which had taken more flies and broken more hooks and lines, for one old fisher only, than would stock a moderate pouch. After many seasons, however, spent in this distant acquaintance with so many anglers, one fatal day brought him to land, weighing nine pounds and a quarter. The rude implements of the savage tribes are therefore successful, because the fishes of their waters are unwary and voracious, particularly the sea fishes.

2876. *An ingenious mode of setting fishing nets under the ice* is practised by the Indians in Hudson's Bay, by which they supply themselves with great quantities of fish. They first ascertain the exact length of their net by stretching it out; a number of holes are then cut in the ice at ten or twelve feet distance from each other, and sufficiently numerous to extend the net its full length. A line is then passed under the ice, by means of a light pole first introduced at one of the end holes. With the aid of two forked sticks, this pole is easily conducted or shoved from one hole to another under the ice, till it arrives at the last. The pole is then taken out, and both ends of the line being properly secured, it remains always ready for use. The net when wanted is made fast to one end of the line and hauled beneath the ice, a large stone being tied to each of the lower corners to keep the net expanded, and prevent its rising from the bottom. In order to search a net thus set, the two holes at the extremities are opened, the line is veered away by one person, and the net hauled from under the ice by another; after the fish are taken out, the net is easily drawn back to its former station, and there secured as before for future examinations.

SUBJECT. 1. *The Dietetical Use of Fish among cultivated Nations.*

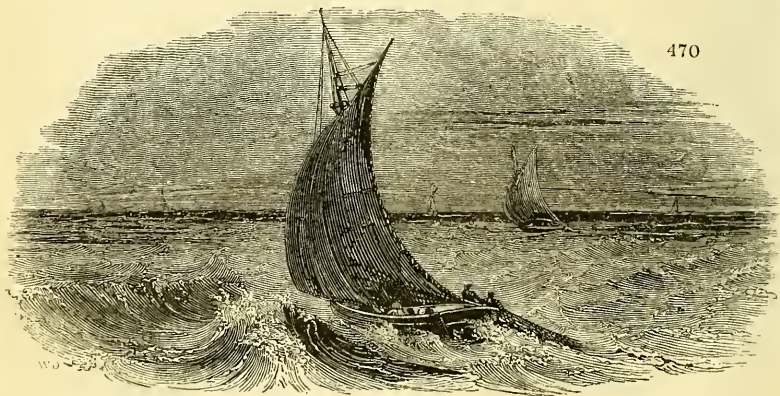
2877. *In the catalogue of edibles* of every civilised country, fish, as we have already stated, occupy a distinguished place; but their value as an article of food has been subjected to great variations. As luxury treads on the heels of civilisation, the first alteration in the general taste of a people, with regard to fish as food, would depend on the difficulty or ease with which it was procured among them, for man ever sets an artificial value on that which is obtained with the greatest difficulty or expense.

Previous to this the preference would naturally be given to such fish as were most readily obtained, or were found to afford the greatest proportion of nutriment. But as refinement proceeds, fish in common with other food becomes subjected to the thralldom of prejudice and the caprice of fashion. Locality must also influence the choice and consumption of fish; thus the inland natives would affect fresh water fishes, while the borderers would seek a larger supply from the sea. In all times particular kinds of fishes have been preferred to others: for this selection it is not always easy to assign a natural cause. The Persians eat no sturgeon, while their neighbours the Greeks are extravagantly fond of it: and this same fish, now but little prized by us, was in former times brought to table, as in the reign of the Emperor Severus, by servants with coronets on their heads. The Greeks again, though great lovers of fish, avoid the enormous carp of their fresh waters. These, however, are so much esteemed by the people of Paris, that in Lavoisier's time eight hundred thousand were annually consumed in that capital. The bream, of which in England we think most meanly, is also much valued by the French, who have a proverb, "He that hath breams in his pond is able to bid his friend welcome." The Romans, equally luxurious and much more refined, on the contrary despised them, with the exception of the lamprey, of which they were so extravagantly fond, that stories truly wonderful are told of the value they attached to them. Caius Hirtius first introduced the keeping of the lamprey in stews, and lent to Cæsar, during the time of his triumph, six hundred of these fish, for which he would receive no equivalent in money, nor any other commodity, but stipulated that repayment should be made by the same number and weight of lampreys. In our times the eel, though a favourite with the English, is avoided by the Hebridians, who consider them as a species of serpent. The eugler, which is absolutely rejected by the upper classes, and is even in little estimation among the lower classes in England, is by the Spaniards and Portuguese dried and powdered to thicken and give taste to some of their best soups. The Scotch and Irish generally *hate eels*.

2878. *The consumption of fish* in many countries is greatly influenced by religion. For example, a fish feast of a religious kind is made by the savages on the banks of the Lake Huron, on which occasion they invoke the spirits of the seas over their nets and canoes, and entreat them to be propitious in their fishing enterprises. The Ichthyophagi mentioned by Herodotus were probably influenced by some such motive. Nearly one-third of the year is spent by the Russians, who profess the Greek faith, in abstinence days, at which times fish alone is eaten. It is probable that our naturalisation of the carp, tench, &c. was encouraged by the days of abstinence, when the country was still Roman Catholic. The remnants of this principle are still seen in our salt fish repasts during Lent. It would have been well had the regulation which prescribed the eating of fish instead of flesh extended itself to the importation of a few more of the continental fishes. The barbel, perhaps the very worst of fish with which our waters abound, is eaten by the lower orders of Jews in considerable quantities during their fasts.

SUBJECT. 2. *The Herring Fishery.*

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HERRING FISHERY.

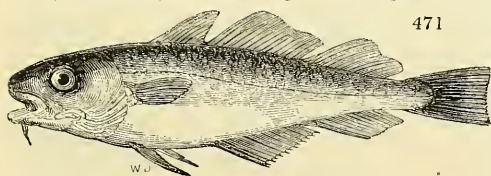
2879. *We cannot omit some further notice* of a more popular character of the herring. The reader has this morning probably discussed a Yarmouth bloater, and will doubtlessly not

object to a short notice of its qualities, founded on our own knowledge and the experience of others. The great rendezvous of herrings is within the arctic circle; where, according to Mr. Pennant, they continue many months in order to recruit themselves after the fatigue of spawning, the seas within that space swarming with insect food in a far greater degree than in our warmer latitudes. In the spring they again begin to move southward, and shoals appear off the Shetland Isles in April and May, but these Mr. Pennant thinks are only forerunners of the grand shoal which comes in June. The vast mass having visited the Shetland Isles divides into two parts; one wing takes to the east, the other to the western shores of Great Britain, filling every bay and creek with their numbers. The neighbourhood of Yarmouth, the great and ancient mart for herrings, swarms with them, and the British Channel is next visited, to the joy of its inhabitants. The other division, after offering themselves to the Hebrides, where the great herring fishing station is, proceeds towards Ireland, and from thence they make their way onward, and are lost in the immensity of the Atlantic. They sometimes frequent certain localities in vast shoals for a series of years, and then utterly desert the same places. A recent work states that they have for some years past wholly forsaken Loch Long, in Argyleshire, though they still abound in Loch Fyne. (*Sportsman in Scotland*, ii. 194—275.)

2880. *The manner of taking the herring* is by means of vessels called busses (fig. 470.), of from twenty to five-and-thirty or forty tons, or even greater burden, each furnished with a sufficient number of boats. The return of the herrings to the Scotch coast is certain; but their visit to any particular loch or inlet is capricious; so that the busses search from place to place, and when they have discovered them, they anchor in the nearest harbours to the fishing ground, from whence they send their boats to fish. Each boat requires four men, or a number proportioned to the tonnage of the buss. In a scarce fishing season each boat has two trains of nets, two hundred and eighty-eight yards long, and from eleven to twelve yards deep: when herrings are plentiful, half this quantity of netting is sufficient. The nets are set, beginning with the first end to windward, stretching the train right to leeward. If in deep water (which, until the herrings set into the lochs, it generally is) both trains are tied together by the back rope and sole, or skonke, which will stretch five hundred and seventy-six yards in length, and in this case the boat is tied to the leeward end of the train, and allowed to drive with the nets to the leeward, the fishermen every half hour, or oftener, trying if there be any herrings in the nets. This they do by warping along the back rope, and here and there raising a piece of the netting. By this means they not only find when they are upon good fishing ground, but they see whether the herrings swim high or low, and their nets are raised or sunk accordingly, by shortening or lengthening the ropes that are fastened to the buoys which sustain the nets. The proper food of the herring is unexplained; it is said they have been taken by means of unbaited hooks. They themselves form a chief food of numerous other fishes of northern latitudes, and they constitute the best baits for many other kinds of sea fish.

2881. *The British fisheries*, which, besides the herring, embrace the cod, the ling, haddock, skate, halibut, turbot, &c. are collectively termed the *white fishery*, and form a very extensive commercial establishment. Mr. Loudon says, "The whole extent of sea, from the neighbourhood of the Orkney and Shetland Islands to Iceland on the one hand, and to the coast of Norway on the other, and along the eastern and western shores of Scotland to the Flemish banks on the east and the coast of Ireland on the west, may be considered as one great fishing domain, over which the different species of the cod genus are most plentifully dispersed, as are also turbot, skates, soles, haddocks, and whittings. These fish, which constitute collectively what is usually called the *white fishery*, surround, as it were, the whole of North Britain, and give to that portion of the United Kingdom advantages of which its southern neighbours cannot boast."

2882. *The cod* (*Gadus morrhua*, fig. 471.) is the principal object of this fishery, and yields in importance only to the herring. It is indigenous to the northern and temperate latitudes,



THE COD.

and is therefore taken in sufficient plenty for our immediate consumption on our own coasts; but the principal rendezvous for cod is on the great sand-banks of Newfoundland, and the other banks that lie off the coast of Cape Breton. These situations they prefer for the quantity of worms produced in the sandy

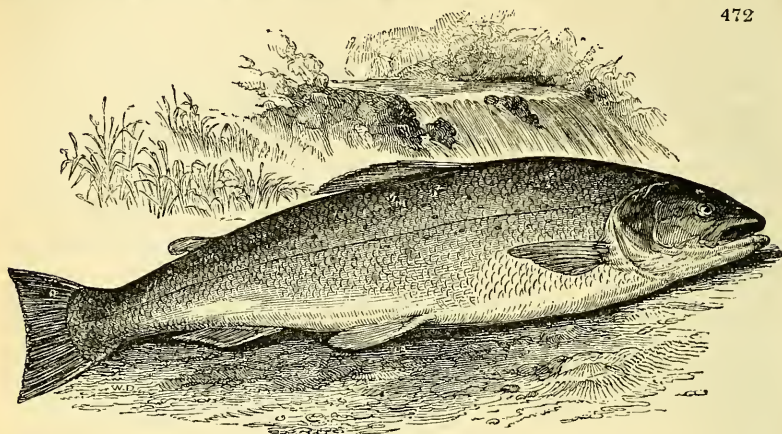
bottoms, which is a tempting food to them; but another cause of their attachment to these spots is, their vicinity to the polar seas, where they return to spawn, and deposit their roes in full security. So soon, however, as the opening season admits of their getting to the more southern seas, they are induced to return thither for a change of food. The principal fisheries for this fish were on the coast of Ireland and off our western isles before the discovery of Newfoundland by Cabot, about the year 1500; and although the English began settling there twenty years afterwards, the fishery did not flourish until 1577, when England had the least share of it. Mr. Anderson in his *History of Commerce* says, the French began to fish there in 1836; and it is somewhere asserted, that their pretence for fishing for cod in these seas was only to supply an English convent with that article.

In our seas the codfish begin to spawn in January, and leave their eggs in rough ground among rocks. They recover more quickly after spawning than any other fish. When out of season they are thin-tailed, and have what are called fish-lice adhering to them. *Monoculi*, *Lernæ assclina*, and *Lernæ branchialis*, attach themselves to different parts of the body.

SECT. IV. *The Salmon Fishery.*

2883. *The salmon (fig. 472.) fisheries*, as a medium of commerce, cannot but interest as well the public at large, as the observant fisherman in particular. Neither is the general

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THE SALMON.

angler unconnected with them, consequently some cursory notice of the subject cannot be deemed irrelevant. The salmon, be it observed, owes little to man; we are altogether its debtors. It does not prey on the produce of the soil, but it owes part of its bulk and nutritive qualities to the destruction of its congener tribes. It leaves its native river at an early stage of growth, and going to its sea feeding grounds, returns of ample size and rich in human nutriment, forcing its way up our rivers and streams.

2884. *The migrations of the salmon* being constant from the sea to our rivers and fresh-water lakes, and its visits being always to the resorts quitted the same or the preceding year, render it, as it were, private property. Such indeed it is considered; and the prices for which those fisheries are let, and the care with which they are preserved, are a sufficient proof of the estimation in which they are held.

2885. *The migrations of salmon* are irregular in regard to time. The discrepancies of the accounts with reference to the appearance of them in different rivers, afford a full proof that they are influenced by circumstances which do not operate at different places at the same time; and that therefore to state a precise period when salmon universally *run*, as it is termed, or, in other words, ascend the rivers from the sea in search of a convenient spot to deposit their spawn, betokens an ignorance in the generalisation of facts, and occasions error and confusion. It appears, however, that a few enter the rivers in the early spring months; as the summer advances the numbers increase, particularly of grilse. Those which arrive first spawn earliest. The "throng" spawning time is about the middle of November. The majority of the spawned fish remain in the rivers during winter, and migrate to the sea in the spring months. Those which spawn first migrate first.

2886. *The season of perfection in the salmon* therefore, far from being definite, is liable to the operation of the same causes which influence them to leave the sea for the fresh water. Thus the salmon of some rivers are said to be *in season* while the milt and roe are in advance but not fully perfected, when those of other rivers are either past the period of perfection, or not yet arrived at it. A latitude is thus occasioned of even three or four months, and hence we may readily account for the different and conflicting statements of those who attempt to fix precise times and seasons for this perfection. According to the general testimony of most witnesses examined before the House of Commons at various times, November, December, and January are the principal spawning months; consequently these months cannot be proper for the exercise of the angler's amusement: such are the anomalies and such the discrepancies that, as already observed, no regular period can be determined on. As a general rule, salmon are in season on their return from the sea; and their condition depends on the time they have remained at sea, and on the abundance and quality of food they have found there.

2887. *The nature of the situation* renders the methods employed in the taking of salmon liable to much variety. These practices may be divided into legitimate and illegitimate: the former are those recognised by law, and by the understanding between the landlord and tenant; the latter are neither allowed by law, nor acknowledged between lessor and lessee, nor are they considered fair in a sporting sense. The legitimate modes of salmon fishing differ, as the station of the fishery is confined or open. "In the extensive estuary of Solway Frith, which separates Cumberland and Dumfriesshire," observes Mr. Loudon, "Two of the several ingenious methods there practised are entitled to particular notice. Besides the open channels which are worn by the Esk, the Eden, and other rivers and brooks that empty themselves into this common estuary, the sands of which its base is composed, and which are left dry at low water, are formed into ridges and valleys by the tides and tempestuous weather. The lower ends of these valleys, or false channels, are wide and deep, opening downward towards the sea, their upper ends growing

narrower and shallower until they close in points at the tops of the sand-banks. As the tide flows upward, the salmon, either in search of food or the channel of the river to which they are destined, enter these valleys or lakes; but finding, on the return of the tide, that their passage farther upwards is stopped, they naturally return with it into deep water, where they remain until the next tide. The manorial proprietors of these sand-banks having discovered this fact, have from time immemorial run lines of nets, during the fishing season, across the lower ends of these lakes or valleys, half a mile or more perhaps in width, the nets being suspended in such a manner, that they are lifted from the ground by the current of the tide in flowing upward, so that the fish find no difficulty in passing beneath them into the lake; but at the turn of the tide, their lower edges fall down close to the sand, and effectually prevent the salmon from retreating. They are in consequence left dry, or in shallow water, and are thus easily to be taken by hundreds, perhaps, at once." Salmon are frequently taken in estuaries by bag and stake-nets.

2888. "*In the river fishing for salmon*, nets of various forms, construction, and dimensions are necessary, as the river may be wide or shallow, or, as it may be, within or without the reach of the tides. The seine, or long draught net, is in general use; but its texture varies according to the size and nature of the other fish beside salmon which frequent it, as salmon-peals, trout, mullets, and other small sized fish, which are in some rivers very commonly taken with salmon. Here, therefore, a small meshed net is used, while another with more depth and wider meshes is retained, to be used during high water and strong currents, when the larger salmon do not fail to hasten upwards, and the same strength of hands which is able to draw a close shell on it, can work a deeper one with wider meshes. In wide rivers with flat shores a variety of nets are required of different lengths as well as depths, to suit every height and width of the water."

2889. *The salmon* is also caught with a spear, which they dart into him as he swims near the surface of the water. Graham, a farmer of a fishery at Whitehaven, uses the spear for taking this fish in a curious and novel manner, which he appropriately calls salmon hunting. The time for this sport is when the tide is out, which leaves the fish in shallow water, interrupted by sea banks near the mouth of the river or inlets upon the shore, where the water is from one to four or five feet deep. Armed with a three pointed barbed spear, having a shaft fifteen feet long, Graham on horseback gallops belly deep into those pools which show, by the agitation of the water, that there are salmon in them. He makes ready his spear, and having overtaken a fish, he strikes it with almost unerring aim: by a twist of the hand, he then raises it to the surface of the water, turns his horse's head to the shore, and forces on the salmon to dry land. His father was the inventor of this extraordinary method of fishing for salmon.

2890. *Salmon* are likewise taken by what is termed *leistering*, or *burning the water*. This practice consists in attracting the salmon by means of a candle and lantern, or sometimes of

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LEISTERING SALMON.

lighted wisps of straw, and in then endeavouring to strike them with a spear or leister. This unhallowed practice is noticed in Mr. Lockhart's *Life of Sir Walter Scott*, on an occasion when the great bard was present. Mr. Skeen, who accompanied the party, relates how Sir Walter fell over the gunwale of the vessel, and that, had it not been for his assistance, he would have made an awkward dive of it. Indeed, at no time is this *burning of the water*, as it is called, engaged in without some hazard; for large salmon are usually to be met with in pools of great depth, which however it is not easy to estimate with precision by the light of a torch. Thus, when one of the persons engaged discovers a fish, and makes a determined thrust at him with his leister or spear, he is very likely to make a false calculation

of the depth, when, intending by a desperate lunge to transfix the salmon, he plunges heels over head into the depth below, and the impetus thus given to the boat sends it to a distance that frequently deprives the adventurer of assistance. If, on the contrary, he has correctly judged his depth, and has transfixed the fish, nothing more is required than to haul it up, and to stun it with a blow on the back of the head, which will have the effect of crimping it. We have frequently heard the northern fishers speak rapturously of the animation excited by a leistering party; and without doubt, to some individuals, the scene must be most animating. The fall of the leaf is the favourite time for its practice, but we are glad that it has been lately put down by law. In rivers not very deep, a boat is not necessary, but waders enter the water by moonlight—not by the glare of the full moon, but in its first or last quarter. One of the party goes before with a light, and two or more follow with the leister, when the fish, struck with surprise by the light, suffer the party to strike them. It is, at best, but a poaching practice.

CHAP. III.

THE ORIGIN AND PROGRESS OF ANGLING



YOUTHFUL ANGLERS.

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2891. *The practice of taking fish with a rod, line, and baited hook, is called angling, and although now more frequently pursued for amusement than for profit, was without doubt in early times an indispensable occupation, and was forced on man to obtain food. Whether fish were first ensnared by line and baited hook, or whether other means preceded them, we have no opportunity of ascertaining. If conjecture be allowed to stand in the place of certainty, we should think it not unreasonable to conclude, that the fishes first obtained by man were such as he abstracted from the shallow pools, or from hollows left in the sands by the receding tide: these he would chase, and might either knock on the head, or transfix with a wooden spear. Observations made on the contents of the stomachs of such as were thus taken, would lead to a knowledge of the proper matters to use as baits for the enticement of others. His judgment would teach him to attach these around some small pointed and curved instrument, capable of fixing itself within the mouth or throat of the fish taking the bait, while he retained a communication with himself by means of some filamentary vegetable or animal matter forming a line. The adaptation of the line and hook to a pole or rod, was consequent on the necessity which soon became apparent, of casting and maintaining the line and hook at a proper distance. Such probably was the origin of angling.*

SECT. I. *The Progress of Angling.*

2892. *The exact period when this art assumed the character of a regular and systematic practice is unknown: we have however sufficient proofs of its antiquity. Figures connected with it as an art, are among the earliest sculptured relics; and the classic reader cannot fail to trace notices of its existence throughout many of the works of the ancients. In the sacred writings we have numerous proofs, that the use of hook and line in the taking of fish, was coeval with the early periods of the Jewish history; and also that angling was practised as an art, separate and distinct from any other less artificial methods in use for obtaining fish. In the book of Job (supposed to have been written even before Moses), we find a portion of the forty-first chapter, which commences in the sublimest style of eastern poetry, peculiarly apposite to our purpose, "Canst thou draw out leviathan with a hook, or his tongue with a cord which thou lettest down?" In the next verse we read, "Canst thou put a hook into his nose?" &c. &c. These interrogatories, it is evident, allude to the practices of angling with hook and line. In the seventh verse of the same chapter we also*

find the question, "Canst thou fill his (leviathan's) skin with barbed irons, or his head with fish spears?" which has likewise been thought to allude to the use of the angling hook. But this opinion, notwithstanding the authority on which it rests, we conceive to be erroneous; on the contrary, we consider this verse as intended to characterise a mode of taking fish altogether distinct from angling. The Egyptians, we know, had made great progress in the arts in the days of Moses; and we have no hesitation in concluding that, by "filling the skin with *barbed irons*," was meant transfixing fish with the *harpoon*.

2893. *Pursuing these scriptural proofs* of the antiquity of angling, we may quote the prophet Isaiah, who has in ch. xxxvii. v. 29., "I will put my *hook* into thy nose." And again, in ch. xix. v. 8., "The fishers also shall mourn, and all they that *cast angle* in the brooks." In the two succeeding verses we have a full confirmation, that angling was at that time an occupation distinct from netting or spearing of fish, as will be seen by a reference, "Moreover they that work in fine flax, and they that *weave net works*, shall be confounded." "And they shall be broken in the purposes thereof, all that *make sluices and ponds for fish*." A notice on this subject is also to be found in the prophet Habakkuk, ch. i. v. 15., "They take up all them with the *angle*;" and again in the figurative description of Pharaoh by Ezekiel, which likens him to a great "dragon" (crocodile), who having offended the Almighty, is told by him through the medium of his prophet, "I will also put *hooks* in thy jaws, and I will cause the fish of thy rivers to stick unto thy scales." By the *fish sticking to the scales*, we may probably understand the remora, or sucking fish, which we know to be hurtful, and even destructive to large fishes by adhering to them with immovable tenacity. The lerneæ, the products, the monculus, and other parasites, also prove injurious to aquatics; but their attacks could hardly amount to the infliction thus threatened. In the New Testament the notices of angling as a distinct branch of fishing are few, but those of systematic net fishing are sufficiently numerous. We learn from St. John, ch. v. v. 5. and ch. xvii. v. 19., that marine fishing among the Jews was an important occupation. By St. Mark, ch. i. v. 16., the same is confirmed; and it further appears from this evangelist, that net fishing in the sea was an employment exclusively professed by particular persons, as with us. We judge also that the vessels used by them were large, and contained numerous hands. Of the extent of the nets employed some idea may be formed from St. John, ch. xxi. v. 10., where one hundred and fifty "great fishes" were drawn to land at one time. It may also be remarked, that the fisheries of those days appear to have been carried on much in the same manner as at present, the nets being suffered to remain all night in action under the watch of the fishermen, who were clothed in an appropriate dress. (John, xxi. 7.) This mode of fishing being recorded in so many instances in the New Testament, and the practice of angling almost unnoticed, constitute no proof whatever that the catching of fish by the rod and line was in disuse among the Jews. The contrary may be inferred from Matt. xvii. 26. The one circumstance which rendered fishing by nets so often a subject of remark was the selection of so many apostles from among those who pursued this occupation for the supply of fish as a necessary and welcome article of food among the Jewish nation.

2894. *During the flourishing periods of the Roman empire*, numerous instances occur in history of the value put on fish generally and in particular instances. As an article of luxury, modern epicureanism affords no examples of equal notoriety with those offered by the Romans. We have also accounts of the methods used to obtain their favourite fish, among which *angling* is noticed as an occupation both for profit and amusement. Trajan was an angler, and his practice of the art gave it imperial sanction. The piscatory exploits of Mark Antony and Cleopatra, with the *practical* retort of the latter, will be readily remembered.

2895. *The traces of the art during the middle ages* are faint: but that it *had a place* among the pastimes of "Merrye England" may be inferred from the genial praises bestowed upon it by the Dame Juliana Barnes, a Benedictine Nun, in the "*Book of St. Alban's*," as mentioned below.

2896. *The early history of angling in Britain* is confined within a very small compass. The parent art indeed may be traced in the various enactments made for its protection; but of that interesting branch which forms the subject of our discourse, even the industry of Mr. Strutt in *The Sports and Pastimes of the People of England* has failed to inform us. The first public notice which bears any claim to a systematic form among us appears in the writings of the Dame Juliana Barnes: but both before and since the prioress, the practice of it has been a favourite pursuit, and has consequently met with numerous eulogists and commentators, as may be seen in our bibliographical notices, to which we would refer the reader who wishes more minutely to trace its progress.

SUBJECT. 1. *The Character of Angling as an Amusement.*

2897. *Angling as an amusement presents features of great attraction*: it is far from dangerous or expensive, but on the contrary is productive of interest and amusement without any great pecuniary sacrifice. Its *apparent* simplicity allures many into the practice; and as a trifling success elates the tyro and leads him on by its fascinations, so he pursues it, although he soon discovers that extreme nicety and precision, great patience, caution, and perseverance, are essential requisites to the attainment of proficiency in the art. Nevertheless, he still continues the pursuit: difficulty after difficulty is overcome; each succeeding year adds to the interest of the practice, which he continues with undiminished ardour to the latest period of his life. It is asserted, and we believe with truth, that there is not one among the field sports that takes so permanent a hold on its votaries as this. It is no less remarkable for the variety it offers; for, like Proteus, it presents itself under many forms, some of which are suited to the taste of every age, of every rank, and every variety of character and habit. The sedentary, the thoughtful, and the advanced in life, may watch the float as it slowly moves with the stream, without disturbance to their train of thought, or without any fatiguing exertion to their person. The active and skilful may throw afar the leaded bait for the pike, or may engage in the graceful evolutions of the fly rod. Its seductions therefore prove universal, and it owns votaries of every age and station. The little urchin catches the early impulse, and seeks the brook, where, with a length of twine,

encircling by one end a crooked stick, and by the other a bent pin, he toils in all the ecstasy of hope to ensnare the tiny banstickle (see *fig. 474.*), heedless of the terrors of a truant's punishment. Each year increases his passion, and now the spliced hazel twig and horse-hair links, the type of "things to come," assist his efforts; and success giving a new spur to his energies, behold him at length armed with a rod of ampler dimensions and workman-like manufacture, with the accompaniments of well wrought line, buoyant float, and tempered hook. Trolling now engages his attention, and emulation giving a continual stimulus to his efforts, he rests not contented until he has mounted the very feather in the cap of angling, and has become the accomplished fly-fisher.

2898. *Having ourselves passed through all these grades*, it may be supposed that we are enabled to form something like a just estimate of the merits as well as the defects of the pursuit. We know that by some it has been objected to angling, that it is a cruel amusement; and by others that it is too puerile and trifling in its nature to engage any but the thoughtless and unintellectual. To both these charges we beg leave to enter a demurrer, in which we hope to be joined at least by every orthodox member of the *Church*, which, in consideration of the mild and contemplative character of angling, did by its silence allow it to be a *fit and suitable recreation for the order of its Priesthood*, at the same time that it strictly forbade other field sports as incompatible with the sacerdotal duties. We have ourselves spent the major part of a life in pursuits connected with the amelioration of the miseries of animals, and we have often (as we hope to do again) advocated the cause of humanity in favour of the brute creation. We have also in our leisure moments followed angling in all its seductive forms, with an avidity which, did we feel its character of a cruel amusement to be a just one, we should be ashamed to own. We will not say that this charge against the general practice is "mere cant," although others have said it; but we do say that inaccurate conclusions and ill-directed sensibilities are at the root of such opinions. A lingering death to an animal nearly insensitive, and an immediate one to such as, by their more complex organisation, may be supposed to have feelings more acute, is in the one case divested of its horrors by a physical property which Providence has kindly bestowed on it to meet its casualties, and in the other is the common occurrence inevitably incident to their natures. That a physical property exists in the lower orders of animals, which renders them insensible at least to *acute* feeling, is apparent from the consequences which follow the injuries they receive. The worm, whose impalement on the hook has called forth so many sensibilities, we will not say is wholly destitute of feeling; but we conceive we are borne out in our assumption, that its struggles are more dictated by the instinctive desire to escape, than by painful sensations. If intense suffering followed the puncture of the hook, it is not reasonable to suppose that, after such impalement, the ordinary functions of life would go on; but such is the case. Release the worm from the hook, and although it may have been wholly transfixed by it, it will seek the first cavity in the ground to repair the personal breaches made in his body. Separate a worm into distinct portions, and it is averred that such portions immediately set about to unite into a common whole; or otherwise each part is gifted with the capacity of forming itself into a distinct and perfect animal. Be it however observed, that we have never put this to this test; others assert it as a fact. Can the sensation be great that is thus diffused? Innumerable other instances might be cited to show how little sensible the lower orders of animals are to acute feeling. The dragon-fly (*Libellula depressa*), when transfixed by a pin, will devour fly after fly with eagerness, and apparently with all its accustomed relish; and if supplied with food will, it is said, live thus many days. Redi, the naturalist, informs us, that in the course of some experiments on vital motion, he made a large opening in the skull of a tortoise, from whence he drew out the entire brain, and even washed out the cavity, leaving not the smallest part remaining. Having done this, he set the animal at liberty, which marched away as though it had not received the smallest injury. In a short space the hole in the skull was seen to close, and in three days a complete covering of skin was formed over it. For six months the animal lived in this state, walking about as usual, and, with the exception of becoming blind, it appeared not at all altered in vivaciousness.

2899. *Be it however understood, we are not favourable to these experiments*; on the contrary, we condemn all such acts as habituate the mind to insensibility, respecting the feelings of the animals around us, even under the impression that their sufferings are trifling: we have no right wantonly to inflict any needless pain on them, and unless some better end is to be obtained than the gratification of mere curiosity, we cannot consider such experiments as warranted. But in the exercise of such acts as are necessary either for developing important truths, or for the capture of the animals, and the appropriation of them to the uses designed by Providence, it is gratifying to consider that their sufferings on such occasions are by no means acute. Indeed, *a priori*, we might conclude that, consistently with the kind ordinations of their Maker, such would be the case. If sensitiveness were distributed among the lower orders of the brute creation in any considerable degree, our whole life would be occupied with one continued system of cruelty: we cannot walk abroad without crushing thousands, and without maiming tens of thousands; every action of our lives carries mutilation to something living; and in taking our most innocent beverages we entomb myriads.

2900. *The use of living baits*, which it is difficult to dispense with in bottom angling, should be free from every kind of wanton cruelty, that this our favourite amusement may not be justly condemned, and that we may advocate its cause with clear consciences. Many living baits are now admirably imitated by artificial means, and the humane angler may use the representations of frogs, minnows, and other small fish, if not with equal success, at least without compunction. Had the frog been as well imitated formerly as at present, it is

probable that our venerable father in angling, Isaac Walton, would have escaped the unsparing lash of criticism, which fell on him in the writings of that severe critic, Lord Byron.

2901. *Resuming our defence of angling*, we express our conviction that, although in some cases genuine feelings, but morbidly excited, may exist, yet that it is principally owing to a fashion of *seeming to feel*, that angling has been so unjustly denounced as a cruel sport. Of the truth of this many proofs might be adduced. A lady of our acquaintance who was wont to be loud in her invectives against the inhumanity of all field sports, was betrayed into a coursing expedition. Two greyhounds accompanied the party into the Tollesbury Marshes. As hares were there very plentiful, one dog was taken up, and the other was soon engaged in an excellent course, in which our fair friend became so interested, that in the enthusiasm of the moment she exclaimed, "Let the other dog loose! pray let him loose, or the hare will escape!" The distinguished author of the review of *Salmonia* furnishes us also with an appropriate anecdote:—"We remember an amiable enthusiast, a worshipper of Nature after the manner of Rousseau, who, being melted into feelings of universal philanthropy by the softness and serenity of a spring morning, resolved that, for that day at least, no injured animal should pollute his board; and having recorded his vow, walked six miles to gain a hamlet famous for fish dinners, where, without an idea of breaking his sentimental engagement, he regaled himself on a small matter of *crimped cod* and *oyster sauce*!"

2902. *Much has also been said on the torture inflicted on the fishes as well as the baits in angling*; but we feel ourselves warranted not only by analogies but by known facts in asserting that the fish, although less insensitive, yet, like the baits, feel none of that exquisite pain which ought to shock true feeling. The cartilaginous mouth of fishes is indeed so little sensitive, that, when after being hooked they have again escaped, they may be taken again and again; and not unfrequently they will take a second bait almost directly, and even while the former hook remains in the mouth. The hooked trout also, after struggling against his capture and breaking away, may in a little time be seen in its old haunts rising to the natural fly, and the next day will sometimes again take the artificial one. We have, on purpose to assure ourselves of these facts, repeatedly marked most of the varieties of fresh-water fish, and, after returning them to the water, we have often retaken them in a little time, and not unfrequently we have done it immediately. The pike has been known to become partially captured by the hook four or five times in one day, and to have gorged a second bait when one was already with its apparatus actually sticking in its stomach.

2903. *If more were necessary to dispel our fears on the score of inflicting pain on creatures sent for our use, but certainly not for our abuse*, the following fact proves the degree of *insensibility* on which we would ground our plea *that angling is not cruel*:—Two young gentlemen of Dumfries, while fishing at Dalswinton Loch, having expended their stock of worms, &c., had recourse to the expedient of picking out the eyes of the dead perch they had taken, and attaching them to their hooks, a bait which this fish is known to take very readily at times. One of the perch caught in this manner struggled so much when taken out of the water, that the hook had no sooner been loosened from its mouth than it came in contact with one of the fish's eyes, and actually tore it out. In the struggle the fish slipped through the holder's fingers, and again escaped to its native element. The disappointed fisher still retaining the eye of the aquatic fugitive, adjusted it on the hook, and again committed his line to the waters. After a very short interval, on pulling up the line, he was astonished to find the identical perch that had eluded his grasp a few minutes before, which literally perished by swallowing its own eye. (*London Museum*, 1822.)

2904. *The partial insensibility of animals*, though indisputable, is not however necessary to shield our art from the imputation of wanton cruelty. On the contrary we assert, without fear of contradiction, that the practice of every *humane angler* is replete with proofs that he avoids every unnecessary infliction of pain in the pursuit of his sport. For what purpose is it so common with him when he has taken a fish immediately to force its head back, but to dislocate the neck and prevent all further sensation? This is but a single instance; the purposed practice of humanity is displayed in many other of the ordinary methods pursued by the experienced fisher. It is only among the unthinking and inexperienced that humanity is ever outraged.

2905. *The study of Nature* presents itself to the angler as a part and parcel of his pursuit: in the calm repose of a mild day, stationed by the side of a picturesque stream everywhere teeming with life, how naturally he wishes to become acquainted with the various objects which compose it, not by a cursory observation alone, but by such an acquaintance as shall inform him of the wise adaptation of the parts in each to the determinate purposes of their existence, and of their habits, instincts, and metamorphoses. Observations on Nature's works are almost forced on the angler. Can he bait his hook with the caddis, after having divested it of its admirably contrived coat or case of mail, without wishing to know more of its history? And as his experience teaches him that it is principally at one time of the year that he meets with these unsightly but curious animals, can he refrain from attempting to follow them to their destination? and will not the inquiry, when pursued, amply repay the trouble it occasions?

2906. *Few objects throughout the vast field of Nature* afford more interest to the inquisitive mind than the transformations which those beautifully winged insects, *Phryganea*, *Ephemera*, and *Libellula* (known in the angler's catalogue as caddis-flies, day-flies, and dragon-flies), are destined to undergo. Little does he at first suspect that the caddis-worm which he now fishes with, and the stone-fly he will dip with a few weeks hence, own each a common origin. It is no less curious to learn that the short lives of some of them are passed without a meal. Bent on leaving others to take their place, after they have expended their brief existence in graceful alternate risings and sinkings to and from the surface of the waters, they lay their

ova, and incontinently sink into death. Can it fail to excite interest to learn that very many of these aerial wanderers, gifted almost with the talent of ubiquity, should be the parents of aquatic creeping insects, confined to grovel over a few feet of the bottom of a rivulet? This circumstance, curious as it is however, is even less wonderful than the fact, that this *masked* insect contains within itself the means of assuming other forms, each progressively more perfect than the preceding, and at last of rising from its watery bed, bursting its aquatic integuments, and shining in all the brilliancy and activity of the parent fly. Does it not excite our admiration to know, that, wide as is the visible difference between the indigent and deformed larva and the perfect imago or fly, remove but the exterior tunic of the former, and the wings, legs, antennæ, and tail of the latter may, by the help of the microscope, be distinctly seen curiously folded up, as if to be ready when wanted?

2907. *The whole page of Nature around the angler* is equally filled with lines of edification and delight. All the objects of his amusement afford ample instruction of this kind. In the movements of the wary trout, darting through the liquid element with a velocity which almost defies the eye to follow, he may be excited to inquire into the construction of the motive organs of fishes, and into their animal mechanism. Does a heavy cloud pass over his head, portentous of thunder, it becomes to the contemplative mind a subject of consideration, why the finny tribes around him, struggling which should first take the bait before, now retire from it in sullen disgust. The cloud being dispersed, and the electric state of the atmosphere with it, again the fish seize the bait. Every object he sees, every occurrence he meets with, affords a fund from whence he may draw stores of information, and multiply his enjoyments.

2908. *If the force of example* be wanting in aid of our attempts to set the character of angling in the exalted situation it deserves among the lighter pursuits of cultivated man, the lives of hundreds of great and good personages will furnish it. Walton is justly proud of the names of Dr. Howell, dean of St. Paul's; Sir Henry Wotton, provost of Eton; Sir John Olfley, and many others. The list indeed might be swelled infinitely beyond the limits of our pages. Gay alternately wrote his poetry and caught his trout at Amesbury. Tobin, the author of the *Honey Moon*, was at once an excellent writer and an ardent fisher. Mr. Coleridge, "the powerful poet of the lakes," also adds to its votaries a distinguished member. Dr. Paley was so enthusiastically fond of the sport, that when asked by the Bishop of Durham when one of his most important works would be finished, replied with much naïveté, "My lord, I shall work steadily at it when the fly-fishing season is over." The heroic Lord Nelson, we are informed by Sir Humphry Davy, was a good fly-fisher; and as a proof of his passion for it, continued the pursuit even with his left hand, having, as is well known, lost his right in the service of his country. The shield of fly-fishing is emblazoned with the names of Sir Walter Scott, Sir Humphry Davy, and Dr. Babington; and if we have been rightly informed, the exquisite little tome, called *Salmonia*, owes its origin to a party proposed between Sir H. Davy, Dr. Babington, and Dr. Frank, to visit the lakes, and to be there joined, as we suppose, by Sir Walter Scott. The very play of men like these must have afforded an intellectual treat. The scattered crumbs, fortunately for us and our posterity, have been collected by a distinguished member of the party into a similar banquet for the absentees. Among the other high characters who have practised fishing with avidity, we may notice that most amiable lady, the late Duchess of York, who herself assured us that it was a great treat to her to fish for perch in the

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VIRGINIA WATER.

Virginia Water. We need hardly call to recollection that it was in these waters George the Fourth erected a sumptuous fishing-house, and thus added himself to the list of royal anglers. Her present most gracious Majesty and H. R. H. the Prince of Wales are anglers.

CHAP. IV.

ANGLING APPARATUS.

2909. *Fishing, like every other art, requires implements* for its practice. There are places where it is difficult to procure fishing-tackle; and there are persons so independent in their notions as to value the sport but little unless the mechanical aids to it are of their own making. These are reasons, then, to render ample directions necessary to enable persons to manufacture or repair these implements for themselves.

2910. *The value of mechanical tact in repairing our own fishing implements* is never more

truly exemplified, than when many miles from home we are deprived of sport, and confined to an inn room on a wet day. We have ourselves been thus situated many times, but have always been able to beguile the time by setting ourselves to arrange and repair our tackle, long neglected perhaps for want of leisure and opportunity. The rainy day lost its gloom in the pleasure of occupation, and in the anticipation of a harvest of future sport. We have in our eye certain friends with whom, at various spots on the Thames, the Lea, and many other rivers at remote parts of the kingdom, we have been thus situated; and we can recall the display of broken floats, severed lines, and fractured hooks, which have occasioned as much pleasure in the repair as in the use.

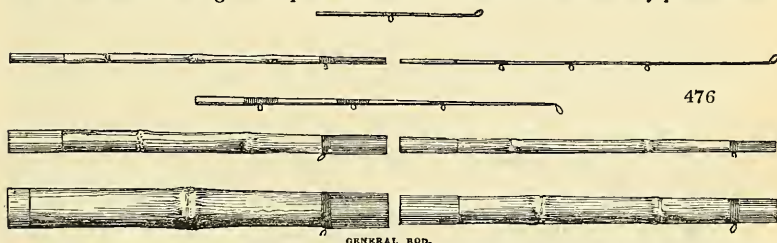
2911. *Another advantage* to be gained by those who thoroughly understand the formation of all their implements is, that they will be infinitely more capable of judging of the merits of similar articles when they are inclined to purchase them of tackle makers. An angler who is known among these artificers to have these capabilities, rarely needs to apprehend any attempt to be deceived by them in the qualities of the articles he buys. These he also purchases often cheaper, from knowing the composition and value of the materials. Although however, for these reasons, it is very desirable to be able to manufacture our own fishing tackle, yet, unless we are so situated as to be not within reach of the purchase, or that we indulge in the whim of preferring, the work of our own hands, it not only saves much time, which may possibly be more profitably spent, to buy it; but in the generality of cases the apparatus met with at good shops is in many respects superior to what is usually made by ourselves. Continued practice begets judgment in the first selection of the materials, and also the best mode of manufacturing them into the necessary instruments afterwards.

2912. *Exceptions however to this exist*, in regard to some of the implements used both in bottom and fly-fishing. In the latter it is essential to perfection in the practice, that the fisher be able to dress his own flies, on which subject more anon; for be it known that fishing-tackle makers, like other artificers, being fully aware of the value of time, endeavour to compass their ends with an expedition often unfavourable to the fitness or strength of the article. This is particularly exemplified in the manufacture of gut lines, whether for fly or bottom angling. The amateur on making such lines will choose only the gut that is perfectly round and even, but in the gut introduced into lines made for sale, this caution is not sufficiently observed. The difference in the *shotting* of lines between the experienced amateur's practice and the vender's is still more apparent. A few large shots will certainly balance the float, but they will as certainly scare the wary fish; yet, as a few large shot are more readily and quickly put on than numerous small ones, we find many ready-made lines so furnished. The amateur will place three or four small shot for each of the tackle maker's large ones, and his success will be doubled by the improvement. Again, it is more than probable that the angler might go into ten shops before he would find a line with the hooks tied with red silk and a projecting bristle; and yet both are necessary in fine worm fishing. Again, for fly-fishing, we seldom have been able to purchase a *truly tapered foot length*, and without it the fly must be prevented from falling lightly or exactly. Neither, when a fish has been hooked, have such lengths usually proved so strong as those made up by ourselves. The loopings, the ties, and all the *fastenings off*, are apt to be made too hastily by the tackle makers: and even when very neat in the execution, are seldom so strong as those manufactured by an ingenious amateur. To avoid these evils as much as possible, when we do purchase these articles ready-made to our hands, we endeavour to deal with one who is himself a known angler. None will so well know how to remedy the defects in his own implements, or to improve on the methods of others, as he who uses them. *In taking an order*, such dealers have likewise a considerable advantage over the mere maker of tackle: they can not only at once meet your views, but they can set you right when you have formed erroneous conclusions, or fallacious expectations; and they alone can furnish the angler with a satisfactory reason for what they allege.

SECT. I. *The Varieties of the Fishing Rod.*

2913. *To an angler the rod is a most important implement*, and is made of various lengths, and different degrees of strength and elasticity. The nominal divisions of rods are almost as varied as the rods themselves, or as the materials they are made of. Thus we have the bottom, the fly, and the trolling rod, we have also the single and the double handed rod, the cane and the wood, the bag rod, and the walking-stick rod, with numerous other smaller varieties. In treating of the fishing rod, we shall consider it first as an article of trading manufacture; and, next, as an article of domestic make. In the purchase of a rod, the nature of the angling for which it is particularly intended, must of course be first taken into consideration, and the order should be given accordingly.

2914. *The general rod*, as it is termed, is a very convenient one for the young practitioner, or for occasional travelling use in places where it is uncertain what fish may present them-



GENERAL ROD.

selves; for this instrument is so extensive in its capabilities, that nothing comes amiss to it; and if in the multiplicity of its doings, it does nothing very well, it will at least act very respectably in most kinds of fishing, except that of throwing the fly, which it executes miserably, although it is used for this also, and has an additional joint and a fly top for the purpose. The *general rod*, through the variety of its joints, may be varied so as to render it fit for roach, dace, or other fine angling; at the same time it may be strengthened to fit it for barbel fishing; or it may, by a slight alteration, be converted into a trolling rod by means of a top with a brass stationary ring bent to a right angle with the joint to

obviate friction on the line. In this rod the various tops are contained in a hollow within the butt or stock, which is closed by a cap made to receive a spike. The butt has also winch-fittings to receive the winch, and the various joints or pieces are furnished with rings throughout. In fact, the beginner cannot do better than furnish himself with one of these factotums.

2915. *The bag rod*, properly so called, is however little more than a light general rod, made into much shorter lengths, viz. of two feet, more or less: it is usually made of cane, and thus can be carried in an inside pocket, when the more formidable lengths might attract notice: it is also an advantage of the cane bag rod, that it packs well into a trunk: by its lightness it is well fitted for any fine fishing, as for roach, dace, gudgeons, bleak, &c. &c.

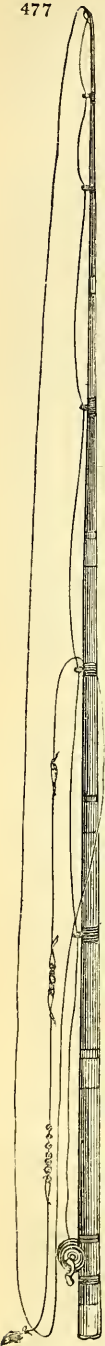
2916. *The walking-stick rod* consists of hollow pieces received within each other, the outermost, or general receiver, being made to resemble a walking-cane. It is made up for the convenience of anglers who have some distance to traverse on foot; and likewise in cases where it might be desirable to have no more of the insignia of an angler's occupation about the person than can be carried in the pocket and the hand. As might be expected, it is not a very efficient article: it however promises little, and it seldom does a great deal. A distinct rod is therefore requisite for each kind of fishing to the professed angler; and, as such, we shall describe the prominent features of each variety, applying them to their several uses hereafter.

2917. *The light bottom rod* for roach, dace, gudgeon, smelt, and other light and fine fishing, varies in its length according to the extent of place fished, &c. &c. ranging from fifteen to seventeen feet: professed roach anglers often use one of eighteen, or even nineteen feet. It can be neither too light nor too elastic (but we mean not the elasticity of the fly rod), particularly upwards, and it is often therefore made of bamboo. To compensate for its want of strength, it is oftentimes ringed throughout, and furnished with a reel and running line; by which means, if a heavy fish should take the bait, the rod will not suffer. A very small reel is no incumbrance to a rod, it adds but little to the weight; and when such a one is placed on the upper instead of the under surface of the butt, a very light rod will kill a very heavy fish: but such should be occasional practice only.

2918. *A stronger rod for perch, chub, bream, carp, tench, eels*, and also for minnow spinning, may be from twelve to eighteen feet long. Such a rod should be altogether stiffer and stouter than the last, and may be either of solid wood or of cane; if of cane, the upper joints should be of the very best bamboo: besides its running line and winch, it should be also furnished with a spike to screw into the butt. A butt spike may indeed be considered a necessary appendage to every variety of rod beyond the very lightest; and it may prove useful even if that be armed with a spike when a heavy fish is hooked, and has been played some time; for by retreating back, and fixing the rod upright in the ground a tight line may be kept, and the fish may be taken out by the landing net without laying down the rod, which is always a hazardous operation. Even if it be a very heavy fish, the angler will find that with a free line, held loosely in the hand, his most violent lunges cannot injure the rod nor disengage the struggler, because, if necessary, more line may be veered out to provide against his striking away. Such are the advantages of a spike.

2919. *The rod for barbel, heavy carp* (see fig. 461.), or for pike fishing with live bait, should be solid; its length may be fifteen, sixteen, or even eighteen feet long, proportioned to the breadth of the water fished in, and the presumed size of the fish likely to be hooked. As all the fish for which it is intended are occasionally large and powerful, if it be weak, particularly in the middle joints, a heavy fish will surely distress and perhaps break it: it should be strong in the top also, and strongly ringed throughout, and must never be used but with running tackle and a spike. To the above remarks it should be added, that nothing looks more unsportsmanlike than to see an angler laying his rod down to land his prize, when weeds, banks, or the weight of the fish prevents its being done in the usual manner. When a rod has been so laid down, we have frequently seen the fish draw it some yards out of its place; and by so doing, is not unlikely to entangle itself, or perhaps the legs of the unhappy angler at the same time: a spike would have prevented all this. In punt angling for heavy fish, a shorter but equally strong rod is requisite. (See *Barbel*, p. 1057.)

2920. *The trolling rod* (fig. 477.) is a difficult implement to describe, not from any complexity in its manufacture, but because there is no kind of rod with which a good troller will not kill pike. A strong top in the hands of a troller may be adjusted to any rod for this purpose: there is usually such a one to the *general rod*, as seen in fig. 476. A professed trolling rod, of whatever length, should be formed throughout on this principle, that the line should run freely without chance of interruption: for this purpose its rings should be large, and by no means too numerous; one to each of the lower joints is sufficient: but it is of more importance that they be fixed and motionless, to secure an easy passage to the line, and to avoid all chance of entangling it. The top should also be armed with a brass collar rounded, smoothed, and bent to a right angle with the joint, to prevent the line from fretting or hitching: it need not have a spike at its lower end, and should have more strength of substance than of extreme length, although in lake trolling length of rod is desirable; but its strength throughout must be great and uniform. Indeed the rods made use of for the full equipment of a thorough pike fisher are required to be somewhat varied; and although we are told by some that any rod may be made efficient for trolling, yet some are so particular as to have one expressly suited to each of the usual methods employed, as live-bait fishing, dead snap fishing, and gorge trolling; nor can it be denied that such is the practice with our crack pike fishers, who affirm that the sport cannot be handsomely conducted *without*. But as the description of such rods will be best understood when we are treating of the uses in which they are to be employed, so we refer to *Pike Fishing*, p. 1104, for all further detail on the implements then to be made use of.



TROLLING ROD.

2921. *The fly-fishing rod* (in angling language the "fly-rod") is commonly considered under two varieties, the salmon rod and the trout rod, and such distinction is certainly necessary; for although the salmon rod might kill a trout, a full-sized salmon would be apt to carry away the whole material of the trout angler's rod. Consequently we must describe and figure both the trout and the salmon rod, which we shall be ready to do in their proper places. Every rod used in fly-fishing should taper regularly from the bottom to the top, except for about two feet of the lower portion or butt joint, which in trout rods that are tolerably fine may as well be enlarged to give firmness to the grasp, strength to the rod, and a counterpoise against its proving top-heavy, as it is termed. In strong rods this increase is seldom necessary, as in them the lower joints are throughout sufficiently strong to form the due resistance against top weight, or an extreme in the degrees of elasticity. With this exception, it may be affirmed that on the regularity of its taper will depend that uniformity of *bend* or *play* which is required to produce a certain mechanical action on the line, by which the thrower is enabled to *deliver* it to its fullest extent with precision and lightness. Be it observed that we do not patronise a hollow butt in a fly-fishing rod: it must weaken it; but, what is worse, it must interfere with the uniform elasticity of the whole rod, which to be perfect should be solid throughout.

2922. *A symmetrical taper* likewise, it must be observed, will only produce this effect when the rod has been originally made solid, and as well constructed on the principle of a just adaptation of the *different* degrees of elasticity inherent in its several pieces to each other; but from carelessness, cupidity, or want of judgment in the makers in these respects, it sometimes happens that a rod with a symmetric taper shall yet act badly. For instance, in the manufacture of a fly rod, if to an ash butt or stock were applied as a second joint a piece of lancewood, as a third joint a length of hickory or fir, and for the fourth joint a portion of bamboo, it would in all probability follow, that however true the taper might be, the lancewood and bamboo being more elastic than the materials of which the first and third joints were made, the uniform flexure of the rod as a whole, which is the best criterion of a good rod, would be destroyed. In the purchase of a rod, it is therefore requisite to be particular in the wood of the individual pieces of which it is composed: the rod when new and stiffened by dryness and varnish, may gloss over defects in the relative flexures of its several joints, which use and moisture may bring out when too late. Prevention is better than cure: but cure comes next; the case therefore is not quite hopeless, and in treating on the domestic manufacture of the fly rod, we shall, if our limits will admit, give directions how to remedy these defects when the amateur may be limited in the choice of his woods. Here no such hints ought to be necessary: neither will they be if a good professional rod-maker be employed in the first instance; for it is a great point with such to adjust the several joints with a just gradation of elastic properties, the butt being the lowest and the point the highest in the scale of elasticity.

2923. *Thus we may observe* that ash, hickory, lancewood, and split bamboo, surmounted with a splicing of whalebone, are seen to succeed to each other frequently in the formation of an elastic rod. Whatever other woods are used likewise, these principles should be kept in mind in their adaptation, and this more particularly in a fly rod, but subordinately so in every other variety. On the subject of enlarging the butt joint it may be well again to remark, that although the flexible properties of a fly rod should exist in due proportion throughout its whole length, yet such elasticity should not be too apparent to the hand in the lower portion of the stock, which on the contrary should be of sufficient substance to give it firmness, and to check too much play downwards. If the butt towards its lower part be not of a proper strength to form some resistance to the extent of the elasticity upwards, the rod will feel top heavy, will tire the hand in action, and will also deliver the fly faultily. The butt of the rod may be considered as the fulcrum of the lever, and should therefore be steady.

2924. *Rods for fly-fishing are double-handed or single-handed*: the double-handed rod is one of considerable length and strength, and to use it requires the application of both hands. It is evident that such a rod can kill very heavy fish, and likewise can command a great length and strength of line, which in very wide rivers is certainly of great consequence. It must however be observed, that this rod has its disadvantages: it is seldom that a two handed rod can be used with the same precision, or with the same lightness in the dropping of the fly on the water as by the single handed practice. We have fished wide and narrow streams, and have always used a single handed rod for trout. For salmon fishing, particularly in extensive and rapid rivers, we have always used the double handed, for the requisite length and strength of rod proper for this fishing, compels even the most athletic to use both arms.

2925. *The salmon fly rod* ranges between sixteen and eighteen feet in its length: we have seen them twenty feet long, but when of this length they are unpleasantly heavy and unmanageable, except in the hands of a very tall and powerful person. This excess of weight may however be avoided, yet the length be retained by using the spliced rod to be hereafter noticed; and thus the short and the tall, the strong and the weak anglers may be brought on a par with each other by a little tact in their mechanics. The salmon rod should be made of the very best materials. Its butt should be made of the best well-seasoned ash, its middle pieces of the best grained old hickory, and its tops of bamboo cane. It need have no spike, but the extreme end of its butt should be rounded, for in working the fly through the water it is constantly necessary to press the butt-end of the rod against the flank or lower part of the abdomen.

A scale of the usual proportions which the weights of rods bear to the lengths, and also of those which the splice jointed rods bear to those with brass joints, may prove useful:—

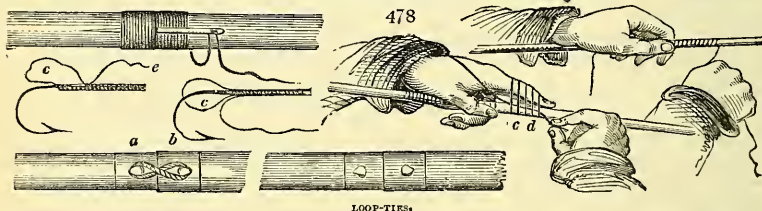
18 feet salmon rod, 4 brass joints, screw ferrules	weight 2 lbs. 12 oz. to 15 oz.
16 feet salmon or trout, ditto, ditto	2 lbs. 6 oz. to 12 oz.
14 feet trout, ditto, no screw ferrules	2 lbs. to 2 lbs. 2 oz.

SPLICED RODS UNBRASSED.

18 feet salmon rod, three joints	weight 2 lbs. to 2 lbs. 4 oz.
16 feet salmon or trout, ditto	1 lb. 8 oz. to 1 lb 11 oz.
14 feet trout, two joints	1 lb. 3 oz. to 1 lb. 6 oz.
13 feet ditto, ditto	1 lb. to 1 lb. 3 oz.

2926. *The jointings of fly rods* in general have occupied the attention of many mechanics, and numerous inventions for the purpose have appeared. Every fly rod except the spliced should be ferruled: without this common adjunct, the joints in damp weather, or from accidental wet, swell and adhere too firmly to be separated without much trouble and risk; and in dry weather from shrinking they are also apt to *part company*, i.e. to separate before they are wanted. The best fly rods are therefore now manufactured with a brass ferrule and cappings entire, each of which is received into a complete socket of brass, accurately let into the receiving joint. These surfaces are by the best makers turned out of hand critically true in their adaptation to each other by *bushing*, which is nothing more than grinding them true in a lathe with emery. Much is gained by this precision; for the more perfect the attachment of the whole of the surfaces of the upper and under joints is to each other, the more will the rod act after the manner of a *sapling*, which is a natural rod, and if grown true must be correct and uniform in its pliancy; and the more truly the joints of a rod fit each other, the more will such rod represent one continuous piece in its action as well as in its safety: without this adaptation it is likely that, in the course of an hour or two's action, its joints will loosen. A powerful salmon will be sure to cause this mischief; even a heavy trout has frequently occasioned injury.

2927. *Loop-ties* are an additional security applied to rods. Loop-ties (*a b*) are applied to brass ferruled rods to hold them together when in powerful action. It is done by crossing a waxed thread



LOOP-TIES.

over the points at *a b*. Loop-ties are also threads waxed and wrapped around the wooden portions of a broken rod as at *c d*, and are used in arming of hooks also at *c c*, where on drawing the loose end (*e*) tight, the knot is made fast, and without the inconvenience of having any spare end hanging therefrom. It is this mode which fastens most of the rods used in the southern, western, and midland counties, and for common trout fishing they are in most cases sufficiently secure; where salmon are the prey, the tackle must be proportionally strengthened and secured.

2928. *Screwed joints* are a still more certain security against the pieces of the rod loosening from each other, and are very generally applied to the Irish and Scotch salmon rods. In fact, when a spliced rod is not used, even the trout rods in the North are very commonly ferruled; for in the rivers of these countries longer and stronger rods are usually employed than in those of England, particularly in the waters around London, where there are no chances of being surprised by a salmon in the trout fishings. The continued action of a long and heavy rod, particularly when subjected to the resistance of so powerful a fish as the salmon, will sufficiently loosen the joints (as we have found to our cost), even when assisted by the best wire and thread lappings. For these reasons in salmon fly-fishing the rod (when not a spliced one) is commonly furnished with screw joints, the manufacture of which consists in adapting a male screw to the ferrule of the lower joint, which is received into a female screw of the ferrule of the upper joint. When a rod is furnished with these, provided they be well formed, all danger of any loosening between the several pieces is avoided. It has, however, been objected to the screw joints, that by wear they are apt to become inefficient; and when so, they are not easily repaired. Our own experience, however, assures us, and we are also assured by others, that screw joints from the hands of reputed makers will remain perfect during the toil of several years. These assertions we make with reference to all the joints but the last, the screw of which, from its diminutive size, is certainly more liable to become defective than the others. To obviate this danger, Bainbridge recommends that the top be spliced to the next joint, to which there can be no objection, provided the angler be willing to take the trouble to do it daily, and be skilled in all these manipulations. The weight of the whipping in this case is by some objected to; but the objection, we are convinced, is wholly groundless, as such weight is more than counterbalanced by the absence of the brass ferrules. We should ourselves recommend, in case the trouble of splicing is disliked, that the screw ferrule be used; but that in the making of it the wire for loop-ties (*fig. 478.*) be also added, and thus when the screw is become too much worn for safety, then it should be loop-tied with thread as well, by which every inconvenience may be avoided. Of late joints have been so well brazed as to render the screw unnecessary.

2929. *The bayonet joint* is of later invention, and certainly has the merits of readiness, simplicity, and durability. It was invented, they say, by the late Mr. Holmes, of Cranbourne-alley; and if on trial it be found to answer all the purposes which its appearance promises to effect, it will obviate the principal alleged inconveniences of the screw joints, those being less simple, more liable to become out of order, and not so quickly put together. It will also, at the same time, present equal security with diminished cost; and under these views it has been strongly recommended to trial, and has entirely succeeded. The principle of this method of joint fastening consists in the brazing of the upper joints

throughout, the lower joints being socketed with brass likewise, the collar of the ferrule being bridged to admit the pin of the joint under it, which, by a turn of the piece, then becomes locked. A leathern collar, having the whip fastening, is also adapted to the joints of the spliced rod, but which part of the mechanism is frequently of domestic manufacture.

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2930. *The trout fly-rod* (fig. 479.). After what has been said at the commencement of the article, it will be evident that we make a distinction between the trout and salmon fly rod, so as to completely separate them, because the strongest rod, the same in manufacture and in every essential requisite that is fitted to take trout, would not stand before a salmon of ten or twelve pounds. The rod used for salmon is stouter, and has frequently screw joints adapted to it, not but that those used in the countries where rods are generally so made, and purposely designed for trout fishing, are often screw jointed also. What therefore is to be understood by a trout fly rod is the rod already described, but here figured with a decrease in length and strength; but more particularly it owns a regular taper, a fine top, and an increase in pliancy to that used for the salmon. Such a rod, when it does not exceed thirteen feet in length (our own favourite length is twelve feet six inches), and is made moderately light, can be used with either hand, thus enabling the angler to direct his fly under bushes, or to any determinate spot, with much more precision than can be done by the two handed rod.

2931. *In the pliancy requisite for the fly rod generally*, much contrariety of opinion prevails. In this as in most other matters, the medium is to be preferred. The fly-fishers of the North, being many of them accustomed to the rods of their own manufacture, unencumbered by brased joints, ferrules, &c. are frequently seen to use rods of extraordinary pliancy, particularly for trout fishing. The large segmental portion which such a rod describes, is however apt on its return to catch the line before it has reached its limits, particularly in windy weather, the consequence of which is, that many flies in inexperienced hands are snapped off. It must however be confessed, that a long line, thrown with a flexible rod, does by the impetus it gives to the heavier part of the line leave the foot length with its fly to revolve more slowly over such part of the line, and thereby to settle itself on the top of the stream so naturally, as to do away with much of the alleged disadvantage of any portion of the line reaching the water before the fly. We have seen this very efficient in quick water without wind.

2932. *Too stiff a rod* is however even worse than too pliant a one, and can never be managed to advantage. The fly-fishers of England certainly use less flexible rods than either the Scotch or Irish, and particularly than the Irish.

2933. *The different makers of rods* have all their partisans. In the English metropolis, where every manufacture is carried to great perfection, of rods for bottom fishing there is certainly an assortment unequalled perhaps in the world; and the same may be said of trolling and spinning rods. The practice of fly-fishing, whether for trout or salmon, has become so prevalent of late years amongst persons residing in London, that fly-rods and flies are now made there with greater care and finish, and perhaps better than any where else in the empire. The best workmen from the provinces have come to London; and the consequence is, that Scotch and Irish fly-tackle, particularly the former, has lost its *prestige*. No trout or salmon angler living in London, if he is unprejudiced, will think of going to Dublin, Edinburgh, or Glasgow for his fly-rods. Martin Kelly and Son, of the former city, still retain, however, their old reputation; but, unless ordered otherwise, they make their rods too "whippy." One of the best rod-makers in London is Mr. Blacker, of 54, Dean-street, Soho, because he is a practical fly-fisher of great experience, and takes pride in turning out perfect fly-rods. He pays his men the highest wages, and will have them work according to his taste and judgment. Next to him are Mr. Bond, of Cannon-street, who is a trustworthy tradesman, Mr. Little, of 15, Fetter-lane, a very good maker, and who will carry out well the purchaser's directions; Mr. C. Farlow, 221, Strand; Mr. Eaton, 6 & 7, Crooked Lane; and Mr. Bernard, Church-place, Piccadilly. The Messrs. Bowness, Bell-yard, Temple-bar, are makers that we can safely recommend. We particularly caution the young angler against the purchase of cheap fly-rods. A good trout fly-rod, double-brazed, cannot be made to anything like perfection for less than thirty shillings; nor can a salmon rod be guaranteed good for less than four guineas. Some fly-rods are now made with rent and glued bamboo tops, which promises to be an improvement, as such tops never warp, and under fair treatment cannot be broken. They are dearer than the other rods.

Of rods not made in the metropolis some account may also be expected. We have had three several fly-rods from Edinburgh, but though they were all good in other respects, not one stood true after use; yet we know that excellent rods are made there. Bainbridge says, the best country fly-rods are manufactured by Henry Swann, of Langholm, in North Britain. In Glasgow there is, we are told, a good maker of rods, M'Dougal by name. Dublin fly-rods are praised

FLY ROD.

by many. We saw one which had stood five years' hard work with its joints symmetrically straight, and its screw ferrules still good. In large country towns likewise, particularly in such as are situated in the neighbourhood of important rivers, we have occasionally met with fly rods which surprised us. In general cases such rods have however been too pliant.

2934. *Colonel Hawker's description of a trout rod*, like most of his articles, concentrates in a few words much useful matter. He describes one thus: — "About twelve feet three inches long, and about fourteen ounces in weight. It must not be top-heavy, nor must it have too much play in the lower part; but the play should be just in proportion to the gradual tapering; by which there will be very little spring till after about the third foot of its length. A rod too pliable below is as bad a fault as being too stiff" [or worse] — "and, from being too small at that part, is of course more liable to be top-heavy, which nine rods in ten are: the consequence is, they tire the hand, and do not drop the fly so neatly." Having arrived thus far, there lies before us a continuance of our subject in describing the *domestic manufacture* of rods. We have stated our regrets and our necessities at curtailment; but we think we have, on this occasion, less reason to regret the omission of the *domestic manufacture* of fishing rods than any other matter. Fishing rods in general, but more particularly rods for fly-fishing, had better be purchased of an accredited maker. Such a one can season his wood, and adapt the various lengths and sizes to the purposes required, far better than the amateur. Should he, however, still incline to try his hand on the making a fly rod, let him consult the *North Country Angler*, a work equally plain and detailed.

2935. *A home-made bottom rod* is not an article of difficult manufacture; and as we are aware that many a wealthy fisher may have a peculiar attachment to the work of his own hands, and also that others less wealthy may begrudge the expense which attends the purchase of one, so we will offer a few directions on the subject, having in Northumberland, from breaking our own bottom rod, been forced to the necessity of making one ourselves, or otherwise going without. We chose a well-grown hazel sapling for our butt; our second joint we formed of tough, close, and straight-grained fir, observing that it was free from knots. If the rod be intended to have four joints, the third may also be formed of fir; but unless the length be very considerable, we think three fully sufficient, and of that number we formed our own, and by leather bracing we made them as snug and portable as was necessary, and found that two splicings had a great advantage over three. In the formation of the top joint either lancewood or bamboo may be used; the appearance of the former will be most in unison with the other woods; the latter will be more tough and durable. If the top intended to be made be for a long rod, it should be finished with five or six inches of whalebone. The length of the rod should depend on the breadth of the water and the nature of the fish to be taken; but whatever that length be, the rod should be firm yet elastic, and by no means top-heavy.

2936. *The spliced fly rod* also finds some warm advocates, with whom, when residing in Northumberland, we frequently fished. We also formed, after their fashion, a fly rod of two joints only, namely, the *butt* and *top*; and if a traveller for a short distance, particularly a pedestrian, wishes to travel light, let him use one of this kind. By all means let the two pieces, butt and top, be attached by a splice, fastened by a small leathern thong previously wetted, so that when it becomes dry it may contract and form a tighter bandage. The superiority of a two-jointed rod of this description, circumstanced as we were, we found considerable; for our own fly rod having met with an accident, we took example, and made a very tolerable substitute, by which we gained a rod highly elastic and uniform in action, and consequently less liable to break, and whose play was like that of one continuous piece. A fly rod of this description is particularly calculated to answer the purpose of the tourist, from its lightness, its readiness to admit of repair, and, should that be impossible, his loss will not be considerable, and the first market town will supply a sufficient substitute until he can receive a better from London. To avoid all trouble it would be better to take two rods at the outset: — *store is no store*.

2937. *The number and the placing of the rings* on a rod are more important points than the tyro may at first imagine, and therefore worthy of a little further consideration. For perhaps, conceiving that the rings are merely intended as a convenient method of keeping the rod and line together, he may (by overlooking their mechanical action, which they have on both line and rod) be tempted to put on too few; and those few he may apply without a due regard to situation. The following scale, according to our own experience, will be found a just guide to the placing of the rings. The scale will commence from the extreme point of the top, and indicate the distance in inches between ring and ring progressively downwards. Thus between the top and the first ring there should be $2\frac{3}{4}$; from this to the second, 3; to the third, $3\frac{1}{2}$; the fourth, $4\frac{1}{8}$; the fifth, $4\frac{3}{8}$; the sixth, $5\frac{1}{4}$; the seventh, $5\frac{7}{8}$; the eighth, $6\frac{1}{2}$; the ninth, $7\frac{3}{8}$; the tenth, $8\frac{1}{8}$; the eleventh, $9\frac{1}{4}$; the twelfth, 11; the thirteenth, $12\frac{1}{2}$; the fourteenth, $13\frac{3}{4}$; the fifteenth and last, 16 inches. In a longer rod the lower rings should not increase in their proportionate distances quite so rapidly, but so as to allow an additional ring for each foot of rod, the last always being placed

about thirty or two and thirty inches from the termination of the butt, according as the rod may be short or long. Be it however remembered, that this scale of ringing will not apply to the trolling rod, where the rings should be large and placed at considerable distances apart; indeed, in the very stout trolling rod for leviathans, sometimes ringed loops are screwed on or slipped over the rod.

The mechanical action of the rings on the line is such as to make it prudent to remark, that, provided they be perfectly smooth, they had better be too numerous than too few, particularly towards the top of the rod; for the more the line is kept to the rod, the less extensive or open will be the angles formed between contiguous rings by the rod and line. This will be readily understood when it is considered, that the point of attachment of the line at each ring will be the apex of an angle, whose extent will operate as a lever acting to force out such ring; consequently, the less open this angle is, or, to express it more distinctly, the shorter is this lever, the less strain will there be on the ring on which it acts. A spike should be added to the butt of almost every rod, except salmon rods. This is usually done by means of a screw inserted in the butt-end; but as more convenient, in the home-made rod it may be made a fixture by omitting the screw.

2938. *New made rods require varnish as a preservative.* Rods from the hands of dealers are usually already varnished, and the owner has only to repeat the process occasionally; but with a new rod of our own make, we should wish it to be treated in the following manner:—soak the joints, as soon as finished, in equal parts of drying linseed oil, by brushing them lightly over every day for a week. When another week has passed over, and the rod has become perfectly dry, proceed to coat it with copal, mastic, or hard brown varnish: caoutchouc, better known as India rubber, when dissolved over a slow fire in linseed oil is also an excellent substitute for the other varnishes. The intention of these applications is to enable the wood to resist the effects of moisture and the attacks of insects, particularly the *Dermestes Domesticus*: whatever, therefore, is at once impenetrable to the one and noxious to the other is proper. Thus a solution of any gummy resin may be employed as fulfilling both these intentions. Varnishing has also another salutary effect, it prevents the whippings of the rod from wearing, by giving them a surface at once solid and smooth. We conclude by admonishing the angler, that when he has once obtained an excellent rod, and has habituated himself to its action, he can hardly prize it too much. The continued use of an individual rod (in fly-fishing at least) is like the use of a favourite gun; a dexterity is acquired in regard to the employment of that particular implement, whether gun or rod, which cannot be transferred to another without a long course of practice.

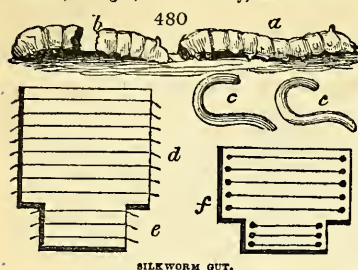
2939. *The best rod without continued care will become rotten from the alternate action of sun, wind, and wet.* To obviate this, take it to pieces, and wipe each part dry on every return from fishing, and place it, not as is usually done, on the first spot that presents itself, but in one determinate situation, free from exposure or accident. Our own plan was, to hang each joint to a hook in a dry cabinet, and to the lower end of each joint we appended a weight to keep it from warping.

2940. *When a rod is put by for the season,* it should be considered in the light of a new rod. Let it therefore at least be well rubbed over with drying linseed oil; the hollow parts should also be oiled, and a dry (but not too dry) situation chosen for it to be laid up in ordinary. It would however be better, after the application of drying oil without, and the soft oil within, to varnish it completely as at first. *Every rod in full use should be thus treated every season,* which will greatly tend to its preservation. It is only by keeping the surfaces completely coated with varnish, that the attacks of minute destructive insects of various kinds can be prevented from penetrating the solid grain. The hollow joints, after they are fully moistened with linseed oil, should be well stopped with a plug as a farther security against these penetrating gentry.

SECT. II. Fishing Lines.

2941. *Lines for angling* are made of the gut of the silk-worm, or of silk, horse-hair, silk and hair, cow-hair, and also of Indian and other grasses. Some lines are made of one of these articles only, others are manufactured of two or more together. Lines, like rods, are either purchased or made by one's self; but, after all, the lines of reputed tackle makers, provided that sound judgment attend the purchase, are the best. In large manufacturing towns in the vicinity of rivers of note, line makers of established reputation are usually found, from whom excellent lines of most descriptions may be procured, and especially such as are peculiarly calculated for the local fishing of each place: for we presume no discreet angler would feel himself certain of meeting in Edinburgh or Dublin with such a roach or dace line as he might obtain at every respectable tackle shop in London. It would be also equally difficult, or perhaps more so, to purchase a perfect and complete series of barbel tackle out of London. To make the foot length of a fly-line symmetrically taper requires more judgment in the selection of the several pieces of gut than most possess, and more patience than most will bestow; and yet, without these requisites, no good line can be made. We particularly refer to the foot or gut length. Fly-fishing is more pursued in the North, and the tackle was formerly more attended to there; we however have by us some good fly-lines of London make. Foot-lines are made excellently, of the very best gut, of the proper tapering form, by those few tackle-makers in London who understand fly-fishing. There can be no sufficient reason why the fly-lines of the London manufacturers should not be as good as those of Edinburgh, — nay, better, since the advantages are in favour of the English metropolitans, seeing they have the earliest access to the markets, whether for gut or silk. Paying also as they do the highest rate of wages, they rear and foster some of the best mechanics in the world; nor has it ever been disputed, that in the manufacture of bottom lines they beat all makers whatever; and we should be willing to back some London fly-lines against those of Edinburgh or Dublin, although we know the Edinburgh fly-anglers are among the best in the world.

2942. *Silkworm gut* is the most esteemed article for foot-lines of any substance known. It is of extreme fineness, strength, and durability, and its natural colour is not found to be objectionable to fish. As its name implies, it is manufactured from the intestines of the silk-worm. Appended to *Nobb's Troller*, is a description of "The Method of Making Indian Silkworm Gut," (fig. 480.), which to those who have not the work, may prove interesting:— "Take," he says, "the best and largest silk-worms you can procure, just when they begin to spin; this may be known by their refusing to eat, having a fine silk thread hanging from their mouths. The worms must be kept in some strong vinegar covered close over for twelve hours if the weather is warm, if not, two or three hours longer will be necessary; when taken out (a) they must be pulled asunder (b), and you will see two transparent guts (c c) of a yellow green colour, as thick as a small straw bent double, the rest of the inside resembling boiled spinach: you can make no mistake. If you find the guts soft, or break upon stretching them, you must let the worms lie longer in the vinegar: when fit to draw off, you must dip one in the vinegar, and stretch it gently with both hands to the proper length, or very nearly so. The gut thus



SILK WORM GUT.

drawn out, must be stretched out on a thin piece of board (d), by putting each end in a slit therein, and placed in the sun to dry. This is the real gut, and the mode of drying it is the cause of the ends being always cramped. If your worms are good, and you follow this plain receipt, you may depend on having the best gut." Notwithstanding the distinctness of the instructions and the promises of success, we have not yet met with any gut so formed: but we learn from other sources that such is really the process of forming the gut, and as a matter of some curiosity we introduce it. The best comes from Spain.

SUBJECT. 1. Rod Lines.

2943. *The manufacture of a gut line for bottom fishing* is neither a difficult nor an unpleasant operation, when the knack of it is once acquired. It is not often, however, that what is called a *gut line* is made of gut throughout its whole length. When a winch or reel is used, two or three yards only are usually appended to the reel line. In some fine fishings, however, a reel is sometimes avoided by wise anglers, as in roach fishing; and then the line is occasionally formed of gut throughout, but more frequently it has four or five feet of spun hair line added to the rod end of the gut lengths.

2944. *In the manipulation of a gut line* commence by selecting a proper number of perfect gut lengths, which, having rendered them pliant by drawing through Indian rubber or soaking in water, place out at length on a table, beginning with the largest for the top, graduating them downwards to the bottom. Having so done, tie each hair to its fellow by a water knot (to be described), and whip the ends neatly but strongly with fine silk, particularly selected for the purpose, which should be first well covered with either shoemakers' wax, or, by preference, with a white colourless but equally adhesive wax, described hereafter. Top the upper end with a loop; the lower end, if intended for float fishing must, by a process which will be detailed in another place, be leaded sufficiently to balance the float. Last of all, either fine-loop this lower end for a looped hook-link, or fasten the hook-link on at once by a water knot; and whip that also neatly and securely as before with the white silk and white wax.

2945. *These minutiae* in the lines purchased of some fishing-tackle makers are not sufficiently attended to, but experienced anglers know them to be very necessary to insure success on some occasions. For these reasons it is, if possible, better to *make lines* after this fashion ourselves, or at least to order them to be so made, than to trust to those commonly sold. The black whippings (for instance) with shoemakers' wax, so usual in purchased lines, when fish are shy will often attract their attention as much as the bait, and thus deter them from taking it. In fly-fishing these black specks are also frequently the cause of false rises both from large and small fish, but particularly from the small fry, which mistake the black whipping for a gnat and it is their eagerness, probably, which deters the larger fishes from coming near. Many anglers therefore, to avoid this, content themselves with the water knot alone; but a line so formed is neither so neat nor so strong as one properly whipped with white wax. In fly-fishing, particularly, the knot is constantly entangling itself in the weeds. Gut lines should be kept on a wooden line-reel in preference to being wound on a piece of split cane, which practice, if often repeated, is apt to fray the line. On the gut lengths for fly-fishing we shall treat when the fly line comes to be considered.

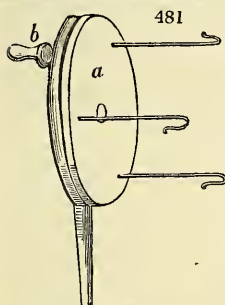
2946. *The hair line* is described by Mr. Daniel as requiring much care in procuring its materials. "The hair that is most proper is that which is taken from a young, healthy, grey, or white stallion, and which is of a pale transparent water colour; that from the middle of the tail is best." Walton however expressly states, that black hairs are always more even than white or light coloured ones. "The hairs," Mr. Daniel continues, "should be sorted singly, and the biggest, roundest, and freest from blemishes, made up into small bundles: the next sized hairs, and all that are sound and good, are to be alike sorted and parcelled out: they are then to be laid in clean spring water for twelve hours; after that, washed well, and dried either with bran, or by hanging them in a room where the heat of a fire or the sun comes (they must not be placed too near a fire): when dry they should be again sorted, and the best done up five or six score together, with their root end quite equal, and tied round with thread at both ends and in the middle, and should be kept in a dry place." Mr. Daniel says, "Hair must not be touched by oil, or it will become hollow and rotten." We however have our doubts of this; and he adds, that it ought to be kept in parchment. Dipping it in water every two or three months, and afterwards slowly drying it, will preserve it for years.

2947. *In the making of hair lines*, each hair in every link should be equally big, round,

and even, that the strength may be so proportioned, that it will not break singly by any force applied, but altogether. By a careful selection of the hairs, they will of course stretch, and bear a much stronger force than when a faulty hair is included. Avoid trying the strength of the individual hairs by a strain before twisting; the best can be easily selected by the eye. Two or three inches of the bottom part of the hair should be cut off, as it is generally defective. The links should be twisted very slowly, and by no means harshly, but so as to twine one with another, and no more; for a *hard* twisted line is always weak. By mixing chesnut, black, or any other coloured hairs, the line may be varied at pleasure."

2948. *The North Country Angler* thus describes his processes of twisting hairs:—"Some make these lines with three small quills, about two inches long, through each of which they put the third part of the hair they use, and have a little bit of a feather end, or wood, to keep the hairs fast in the quills: they tie a knot at the end of the hairs, and twirl all the three quills equally with the ball of their hand upon their knees, putting in hairs, at proper places and distances, into the three quills. Others use three little sticks, about four inches long, as thick as one's little finger, with rings to fit upon their ends to keep the hairs fast; these sticks they twirl about till all the three strands are equally twisted, and then plait the line down to the sticks, and so on."

2949. "*The most easy method of making hair into lines,*" says Mr. Daniel, "is by a small engine, which is sold at most of the fishing tackle shops. It consists of a large horizontal



MACHINE FOR LINE TWISTING.

wheel (*a*, fig. 481.) and three very small ones inclosed in a brass box, about a quarter of an inch thick and two inches in diameter; the axis of each of the small wheels is continued through the under side of the box, and is formed into a hook: by means of a strong screw it may be fixed on any post or partition, and is set in motion by a small winch in the centre of the box (*b*). The process is soon acquired, and it is thus used:—Take as many hairs as you purpose the line shall contain, and divide them into three parts; each of these is to be tied to a piece of fine twine doubled and fixed to the hooks which impend from the machine; then take the piece of lead which has the hook at its top, and after tying the three parcels of hair together at the loose end, hang the weight thereon; after this, cut three grooves in the sides of a cork at equal distances, and in each groove place a division of the hairs, that, by gently turning the engine, the links may turn with the

greater evenness to the lead. As the link grows tighter, move the cork slowly upwards, and when the whole is sufficiently twisted, take out the cork and tie the link into a knot, and so proceed till the quantity of links wanted for a line is completed, observing to lessen the number of hairs in each link in such proportion as that the line may be taper. The links should then be laid for an hour in cold water: some persons, whether a hair starts or not, retwist them before they are made into a line, and more particularly when there is an odd hair in the number twisted. Some put the hair for ten minutes into warm water, before working it into links." We introduce this line practice, not because we doubt the goodness of the manufactured lines to be bought at our best fishing-tackle makers, where we know the very best are to be met with, but we do it to meet the wishes of many fancy artists, who are not well pleased unless the whole of their gear is of their own make. The capability of thus furnishing their own lines is particularly felt by those who live very remote from the metropolis, or are on their travels.

2950. *When a line is to be made of the plats just described*, the practical artist takes three or four for the upper part of his line, with twelve hairs in each; next three or four with nine, and two or three with eight or seven, which finishes the groundwork of what he considers a strong line. After being held together by dipping about half an inch into melted wax, they are to be divided into three and spliced, wrapping above and below the splice. At each end of every line an inch loop is made, either wrapped or knotted.

2951. "*To make a fly line of horse-hair,*" says Mr. Daniel, "without the aid of the above mentioned engine, and where a reel is not meant to be used, take three hairs, put them level at top, and knot them; cut off the other ends so far as they appear faint, leaving all of the same length; then hold them even over the top between the finger and thumb of the left, and begin twisting with the right hand, stroking them frequently below the hand that holds them to keep them from entangling; then proceed to the end and knot it. When four of these are finished, make four with four hairs each, four with five hairs, and continue increasing a hair until the quantity requisite to complete the line is done: these links should then be put into cold water for half an hour, which will show whether the hairs shrink in any of the links, and such as do must be retwisted. The four smallest are to be tied together in water knots, leaving the finest (should there be any difference) lowermost: proceed thus in fastening the links together until the line is made, which should be from nine to twelve yards long: the short ends must be cut away near the knots and whipped

with well-waxed silk, and a loop made at each extremity, one to fasten to the rod, the other to loop on the foot links, which should never consist of three yards of either gut or hair for fly or bottom fishing. In making strong lines for bottom or other angling, you may begin with any number of hairs, and increase every link or every other link, recollecting that in a four-hair link they may be divided as you twist, keeping two on each side the hand: with six they must be divided into three equal parts, and in like manner for any size that the fingers can twist, and which they always do better than any other mode of twisting."

2952. *The single hair line* remains yet to be described. This line many of our best anglers use at *bottom* for roach, dace, and other *fine* fishing. The only art in the making of this line is to select the very best hairs, and to tie them with a water knot firmly without whipping; but the knot may be rubbed between the fingers with a morsel of white adhesive wax until it becomes covered with it. We prefer the using of no more length of *single* hair in the making of this line, than what is within the observation of the fish: all the rest of it we add of some other fine but stronger material. The upper part of the line may be of *three* twisted hairs, the centre portion of *two*, and two or three feet of the lower part of *one*, as will be again noticed in roach angling.

2953. *On the advantages of single hair lines* we find the following valuable remarks in that excellent practical work, *Salter's Angler's Guide*; and as they are in exact accordance with our own ideas, and with our practice also, we avail ourselves of the additional weight which our precepts must gain by this authority:—"In respect to the advantage arising from angling with lines made of single horse-hair and hooks over those which are made of fine gut, some difference of opinion exists among anglers: the advocates of gut say, when it is equally fine, and of the same colour with horse-hair, it is not more likely to alarm fish than horse-hair, and being much stronger it certainly deserves the preference. This seems plausible; but I know from practice, that in angling with a single hair line, fish (especially roach) may be taken that will not touch the bait when offered with a gut line, though the line shall be as fine and of the same colour, &c. as the hair line. To ascertain the fact, I have several times taken off my hair line when roach have been well on the feed, and put on one of gut; I could then hardly take a fish: again I have changed for the hair line, and again had excellent sport. Such has invariably been the case with me and many experienced anglers of my acquaintance; therefore I should certainly recommend single hair to those who fish for roach, dace, bleak, and gudgeons; and assert, without fear of contradiction, that they will kill nearly two for one to others who angle with gut however fine. The only reason I can assign for this difference is, that gut swells, and ever retains a shining glossy appearance in the water; and also that small beads or bladders of water hang around the gut, which increases its bulk while in the water, and probably creates alarm among fish."

2954. *Indian grass lines are often used*, and are convenient for the length of each piece; but though extremely strong at a regular extension, yet they are not calculated to resist a sudden effort. In the formation of grass lines, observe to have each link well moistened before beginning to unite them together: the knotting and whipping must be the same as in the gut line already noticed. We have seen, and indeed possess, some specimens of a grass from New South Wales, which, for fineness and strength, surpasses every thing we have yet met with.

2955. *Bristles may be made into lines*, according to the *North Country Angler*, of greater strength than lines of any other material. It is necessary, he informs us to employ for this purpose the Russia bristles, which are much longer and larger than ours.

2956. *To make a bristle line*, he directs us "to split one end of each hair into two portions for about an inch, which is to be dipped into melted white wax, and then joined to the end of another similarly split, by interweaving them splicewise, and finely wrapping or whipping the joints: proceed thus until a sufficient length is obtained for the purpose wanted."—An excellent job for a wet day!!

2957. *Bristles are, however, applied very usefully to the drop-fly* in fly-fishing, as we shall describe anon; but as to their capability of superseding the use of gut, we much doubt. The numerous joinings required would be a very objectionable circumstance; and we strongly suspect that many matters produce an accidental decay in hair which gut will resist.

SUBJECT. 2. *Running or Reel Lines.*

2958. *Silk and hair running lines* spun together are now in very general use by all who can afford to have them. They prove with care very durable, and by the evenness of their texture are particularly adapted for reels. They are manufactured of various lengths, from twenty yards to one hundred and twenty. Bainbridge says, "For bold streams the line should be of the same thickness throughout, and not too fine, in order that a taper hair line of ten yards in length may be attached thereto." We know that this plan is put in practice in some of the north-western districts; but with all due deference to Mr. Bainbridge's instructions, which are in general most excellent, we cannot see why two lines should be made when one will do; neither can we recommend that the reel line be otherwise than spun tapering, unless it be of great length. Our own plan is, that the running line be wholly of silk and hair; but that all lines whatever, beyond thirty yards long, be *spun uniform in size for a certain portion of their length, and of rather more than the usual substance*. This portion is optional; it may very properly be uniform for one half of its length, from which part every reel line, of whatever strength, should be tapered. But we are, perhaps, rather travelling "out of the road," as we shall have to enter on this subject more fully when we describe the fly line. We in fact are now treating of the manufacture of silk and hair lines generally, and of such as are applicable to all varieties of angling, to which however these lines equally apply (though most used in fly-fishing), the platted silk line without hair being often used as a running line by bottom-fishers.

2959. *Platted silk lines* of every colour are also manufactured, which are durable, soft, and flexible, though very tough, and thus are peculiarly calculated for running lines in jack trolling, minnow spinning, &c., or when angling for barbel, perch, carp, and bream; in which, and many other cases, twenty or thirty yards of this line being on the reel, one end of the gut line is attached to it (by looping or by whipping, which is the better method), being first passed through and beyond the rings, when it forms a strong and convenient *running bottom line, without catch or impediment throughout*. Silk platted lines, though excellent for these purposes, are, however, wholly unfit for fly-lines, from their weight and great absorption of water. If mixed with hair they are good.

2960. *The eight-plat silk line* is a new manufactured running line, which bids fair to supersede the platted silk line heretofore in use: it is perfectly round and firm; much more so even than the silk and hair line, and is said to form excellent salmon fly lines. It has the advantage, when well made, of neither kinking nor ravelling, and is therefore well calculated for trolling and minnow spinning. The large is manufactured for about 3*d.* a yard; and the small, as of more difficult manufacture, at 4*d.*

2961. *The fly or running fly line* is a most important matter to the fly-fisher. We have already given sufficient directions for the making of running lines, either of hair, or, what is much more commonly used by those who choose to afford them, of *silk and hair spun together* as already directed. We however must again recommend the prudent angler to purchase them rather than to make them, as strongly as we would incline him to make his own foot lengths in preference to buying them. To do this neatly, and yet with the requisite strength, is the point to be desired; and a little practice with observation will attain it. The conveniences it will produce, and the independence it will bestow on the angler, will compensate him most amply for his trouble. We shall endeavour to enable him to become expert in all these necessary minutiae, partly by detailing our own practice and the experience of many years; and to do it more effectively, we shall also add the directions of others, collated from the most accredited sources.

2962. *Hair fly running lines* likewise are now manufactured of every length, and with the requisite taper; and, being without silk, they are obtained at an easy expense. By means of spinning instead of plating, they are now made uniform and without knots; but the stiff ends of the hairs protruding, still give to this line a disagreeable roughness; neither do they pass either the reel or the rod rings so pleasantly as the spun silk and hair. When, however, a hair line is to be manufactured by the old method of hair lengths, as already directed, it should be begun by taking as many hairs as will be commensurate with its intended length and requisite strength, both of which must necessarily depend on the width of the water where it is to be used, and also on the probability that salmon or sea trout may be found in such water. Every snood or link should decrease until it end in two hairs, if no gut be used. These last hairs should always be twisted, although Cotton, the angler and the friend of Walton, has entered into a long disquisition, whether they should be left open or twisted; and at last omits the strongest reason why they should be twisted, which is, that, when open, a most offensive ripple is made by the double action of two disjointed hairs.

2963. *The fly running line for salmon* should never be less than sixty yards long, and where large fish are expected to haunt, eighty or a hundred are not too much. When of these lengths, it is not usual to taper the line until within a few (say twenty) yards of the end. Sometimes it is not tapered throughout, but a taper hair length of ten yards is added to it when wanted, a plan, however, to which we have already stated our objections. The spun line is to be preferred for strength, durability, and neatness, and may be purchased of any length at from 2½*d.* to 4*d.* per yard, usually of a water coloured blue: its bottom length of gut we shall describe with the trout line.

2964. *The fly reel line for trout* should not be less than twenty yards long. Where heavy fish resort, and wide waters are fished, thirty or forty yards are not too many. Trout lines commonly taper from or near the outset, and for single hand throwing none other should be used. We were in the habit of fly-fishing with a convenient and economic line: it was forty-five yards in length, about eight yards of the middle portion of which was uniform in thickness, from each end of which portion it gradually tapered to the usual degree of fineness. Its advantages were, that it afforded a very long line if a heavy fish was hooked, and in case of accident to the fly line, all that was required was to unwind and turn the ends, and then rewind, when a new line presented itself, to which, when the spare foot length (which every prudent angler should carry) was added, every thing was complete to begin again. Its economic advantages were, that in much using the finer part of the spun line will both rot and fray, and as it cannot be pieced to advantage, so the remainder is only fit to troll with or to serve for bottom lines, neither of which perhaps is wanted. By the method now proposed it is only, as already observed, to reverse the line, and altogether a new fine part is gained. We believe no plan for fly lines for trout or small salmon is equal to this.

2965. *The foot or bottom length* is no less important than the line itself. Unless where very

fine fishing with one hair is required, either Indian grass or silkworm gut were the general articles used in the manufacture of it. The *grass* runs in long lengths and is strong, but it is so *heavy* and so *brittle* as to be unsafe to use without half an hour's previous soaking: these disadvantages have almost excluded it from our books.

2966. *The gut foot length* will therefore particularly engage our attention, and is to be made in the following manner: its length should be from three to four yards, and it should be so put together, that the largest and strongest lengths graduate from the top into those which are finer and proceed downwards. Unfortunately this gradation is not always attended to in the gut foot lengths which are to be purchased; and it is this neglect which gives a decided advantage to those made by the angler himself if he be expert. Some content themselves with simply tying each gut to its fellow by a water knot, and argue that the line is lighter for this. We ourselves accurately weighed the whipping of a foot length firmly fastened, and found it increased the weight five grains only. It is objected also that the whippings are mistaken for gnats, and the fish often rise to them instead of the fly: this we allow to be really the case when the whippings are made with black wax, with which fly lines purchased at fishing-tackle shops are all whipped; but it was our custom to whip with white wax, which may be made equally adhesive and equally plastic. That whipping the knots of the line is necessary, every day's experience in rivers at all encumbered with weeds will show; for when used without, the gut ends which protrude though ever so slightly, the line will hang in the weeds, and bring away small portions, which must be cleared away at each throw, or nearly as often.

2967. *The fly line terminates with a fly.* What is the best mode of attaching this? The most usual is by means of a fine loop: but the objection to a double looping is here greatly increased, and can only be avoided by knotting the fly to the foot length. There is, however, this disadvantage attending it — that either this individual fly must remain permanently attached to the line, or that a portion of gut must be lost at each time of changing it. One mode by which this inconvenience may be avoided is, by having two, three, or more foot lengths, as we ourselves have had, and as we have known some very excellent anglers to have likewise done. In such foot lengths the end fly alone is attached; for by a plan presently to be detailed, the drop-flies are readily detached without looping them.

2968. *Another mode of avoiding the inconvenience* of having continually to shorten the foot length is one practised by ourselves: finding it better to altogether dispense with an end loop, the next question was, how to apply it without its injurious consequences of making a ripple and scaring the fish. This we effected in a great degree by removing the loop two or three lengths of gut from the stretcher, which was done by knotting to the gut of our end-flies an additional gut link, and then making the fly loop at the end of this. We sometimes applied two gut lengths, that we might in still waters remove the loop still further from the stretcher; and we know of no reason, save the loss of gut, why this should not be always done. Thus we had a double or treble length of gut to each stretcher-fly, which removed the objectionable loop much farther from it, and in this practice we long continued. Of course we now allude to purchased flies. Those of our own make we purposely dressed on three lengths of gut, and these we invariably used when we fished with one fly only. When we employed drop-flies, we dressed our stretcher on two lengths of gut, and to the first knot above the looping we attached our first dropper, and so on.

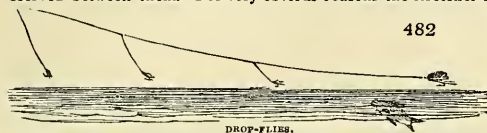
2969. *When more than one fly is used in fly-fishing*, the additional one is called a *drop-fly*, and by some a *bob*, of which there are sometimes two, occasionally three, but seldom more. As these flies drop or hang down from the line, so they gain their name of drop-flies, as the fly which terminates the line and helps to extend it is called the *stretcher* and sometimes the *point-fly*. In narrow streams, and particularly where they are encumbered with weeds, a single fly is greatly to be preferred; and likewise when fish have been in great plenty, we very seldom in our own practice employed more than a single fly. There is a certain end proposed in most pursuits. Is the angler anxious for quantity of fish? Does he reckon his sport only by the weight and number he takes; and is he indifferent as to the means by which he attains his end? Or does he rather prefer the gentlemanly exercise of his art with skill and elegance, whether he return with few or many victims? There are great differences in taste: slaughter is the watchword of some sportsmen, and quantity forms the luxury of the pursuit: with others the practice adroitly managed with moderate success is sufficient. The latter will be commonly found fishing in well stocked waters with one fly; such is certainly the most scientific practice, and in its performance is by far the most interesting and satisfactory.

2970. *Drop-flies* are however necessary at particular times and under particular circumstances, and are used to advantage in wide stony rivers, where the water is fine and the fish scarce; in which cases it is perfectly fair to use every means to insure sport. By using drop-flies a variety of bait is exhibited, the favourite fly of the fish is sooner brought into sight, and three flies are certainly more likely to pass within view than one, when the fish are few and widely extended.

2971. *The attaching of a drop-fly* is variously performed. If only one be used, it may be placed three feet and a half, or, if the water be wide, four feet from the stretcher: when more than one drop-fly is attached, the first should be placed about a yard from the stretcher or point-fly, at which part it is usually fastened by a loop just above a knot in the descending part of the line (our own mode of fastening the drop-fly will be described presently). This *first* drop-fly should hang about three inches from the line; but when only one is used, and that is placed four feet from the point-fly, the bob or drop-fly may be hung four inches from the line. The *second* dropper, when more than one is used, may be fastened in the same way with the former, about a foot and a half from it, having a length of gut, or hair, of four or five inches, according to circumstances. When it is wished to use even a third

drop-fly, let it hang six inches or rather more, about a foot, from the second. It is to be observed, however, that more than two flies, besides the stretcher, or point-fly, only encumber the fishing, add to the weight of line, make more stir in the water, and prevent the lightness of the fall of the flies generally. But, as before observed, the real elegance of the practice is materially injured by any drop-fly at all.

2972. *Where drop-flies are used (fig.482.), regard should be had to the just proportions which should be observed between them.* For very obvious reasons the stretcher-fly ought to be the largest, to carry the line by its momentum beyond the resistance offered by the drop-flies. For the same reason it is necessary that the first drop-fly should be less than the point-fly, and that the second drop-fly, if there be one, should be still smaller than the first. A prejudice also exists among anglers in favour of using a winged fly at the point, and hackles



as droppers. In our own practice we have frequently found it more prudent to use small winged duns, gnats, and ant-flies as droppers; and we have chosen indiscriminately, as it suited our purpose, either a palmer-hackle or winged fly for the point. We have dwelt on these particulars, because we are convinced that an observance of them is necessary to a successful practice of the art. We however make no doubt but that some, perhaps many, fly-fishers will laugh at our dislike to loopings. We agree with them, if they please, that they are most convenient; but we shall be borne out by every observant and experienced fisher, that the additional weight and size of the line which it receives by the duplicatures of the loops, is in itself a great objection to them; and the increased ripple which they occasion in the water when the gut parts, as it frequently does, is still a greater evil. Unless therefore the plan we have just specified, of a more distant loop be adopted, we recommend the point-fly to be fastened to the foot line by a water knot in preference to a loop. The drop-flies may also be secured without looping by a method yet to be described, which acts by placing them between running knots, by which they may be changed at a moment's notice. The simplicity of construction of this mode of hanging the drop-flies will prevent any injury to the line, and their own firmness if properly attached will prevent them from yielding to the action of the water, and of doubling, as is too frequently the case with drop-flies, close up to the line itself, and then moving along the stream with that in one continuous body, thus destroying every chance of their attracting the notice of a fish.

2973. *The slip-knot mode of attaching drop-flies is exemplified in fig.483., and is that to which we have just alluded, and we strongly recommend it to the notice of every angler.* Bainbridge hints at the same method, but we do not recollect it being observed on by any other writer. We will suppose the foot length divided about the insertion of each dropper, and its union again partially effected by a loose knot at the end of each portion. It will be observed that this knot differs from the common slip-knot only in having its end passed twice instead of once through the loop. It is evident that if these knots be drawn tight, the union will be complete and firm, but that the knot will slip backwards and forwards on the smooth gut by the application of a little force. As long therefore as the knots remain otherwise than drawn towards each other by tightening the line, any thing can be put between the two links of line. When by the extension of the line in fishing, or by the action of the hands, these knots are drawn together, the interposed substance, which in this case should be the line of the dropper, is closely embraced, and is permanently detained in this situation by a knot made in the upper end. We know of no mode of fastening firmly any matters that are likely to be wanted to be attached to our fishing-tackle than this; it is at once strong, takes up little room, and never unties. It offers nothing bulky to attract the



attention of the most wary fish, which in some cases must be taken into consideration in treating with these gentry for the price of their captivity.

2974. *To change the drop-flies thus attached, nothing more is necessary than to draw apart the knot of each end of the fly line by means of the thumb and finger nail, when the looping will slip open, and allow of the removal of the fly.*

2975. *Very fine fly lines bottomed with single hairs are eagerly sought after by some anglers, with whom it is the brightest feather in their cap to be able to land a large fish by means of one hair.* Single hair lines are also absolutely necessary to insure sport under some circumstances, as in bright and shallow streams during the droughts of summer. It is true gut lines may be got equally fine; but they are more glossy.

2976. *A very ingenious hair fly line is thus described in the North Country Angler.* Its links are made with one, two, or three flies to loop on at the lower end of the line. For the finest line he recommends that the link be all of single hairs, the smallest and weakest of which must be selected, and the end fly dressed to the root or thick end of it. This fly he advises to be a dubbed one, "because, being often under water, it will resemble a sitting fly, while the hackle will look like a fly on the wing!" He generally dresses it with wings only, with a bristle to keep on a grub or gentle, which, for autumn fishing particularly, is an excellent practice.

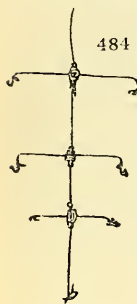
2977. *The second fly in this fine fishing should be a hackle dressed to the small end of the second hair, which being done, the lesser end of the first hair is to be put to the fly end of the second hair.* By drawing this fly about three inches beyond the end of the other hair, and fastening it with the fisher's knot, the second fly will hang perpendicularly from the line. The third hackle is to be dressed to the small end of the third and strongest hair, knotting it to the thick end of the second hair, but letting it hang an inch lower down than the second fly.

2978. *When the hairs are more than twenty inches long, put two only into the link, and consequently only two flies; for when there are three flies, they should not be more than eighteen inches from one another.*

If there are three lengths of two hairs, the same method must be pursued; but when the uppermost plat is of three hairs, then the third fly may be dressed to the thick end of the second plat.

2979. *Night lines* are used for eels, trout, perch, and other night-roving fish; and as it is usually the largest fish which are then on the feed, so the material of which such lines are made must be proportionably strong, but more particularly so when they are intended for eels, whose powerful struggles require chalk line, laidcord, or strong whipcord; but the latter, it is to be remarked, are very apt to kink or tangle. Twine, when hard twisted, makes excellent eel lines in the following manner:—Take three or four links, according to the strength of the twine, and plait them, firmly greasing the line when finished, which will greatly tend to prevent its kinking. For eels about ten yards of this, or other stout line, should have eight or ten inches of gimp attached to it, and to the gimp, whip very firmly a double or single hook, according to the bait used. The other end of the line should be fastened to the shore by a strong wooden peg.

2980. *The chain line* is also a night line, and must be of still stronger manufacture, requiring not less than from ten to twenty yards of such line, jack line, &c. having pendent from it, at every two or three yards, half a yard of platted line, whipcord, laidcord, or gimp, with proper single eel hooks. For the use of these we refer to eel fishing.



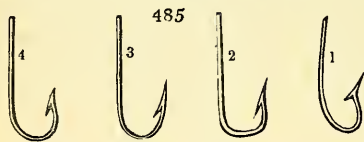
PATERNOSTER LINE.

2981. *Salmon, trout, and perch*, are also taken by *night lines* of platted silk and hair, whipcord, platted twine, &c. Some are made in the form of *paternosters*; some are attached to trimmers, strong plug floats, &c. &c. The various forms of these night lines and the materials connected with them, as well as manner of using, will be more fully detailed when treating of the capture of the several fish for which they are adapted.

2982. *The paternoster line* (fig. 484.), so called, we presume, from the rosaries which have beads for the Pater Noster at intervals, is a strong line exhibiting in a row various projecting hooks of different sizes, the largest and strongest of which are placed lowest, as the smallest and finest are the highest. The bottom of the line is suffered to drag on the ground by means of a bullet, or leaden weight; and the first hook is fixed about four or five inches from it; and as many of them as the angler pleases are hung above that, each placed from twelve to fifteen inches apart from another. Each hook is whipped on a bristle or strong gut, by which it is made to stand out horizontally from the line, and show the bait well.

SUBJECT. 3. Hooks.

2983. *The hook* is an appendage of much consequence to fishing apparatus. Infinitely varied as we find its figure, as depicted in ancient lore and in the specimens brought by travellers from cultivated as well as rude and savage nations, yet the principal modifications used by the English angler are known by the names of the Limerick (1, fig. 485.),



VARIETIES OF HOOKS.

the Kendal (2), the Roundbend (3), and the Kirby (4). The Limerick hooks were formerly doubly segmental, appearing as the larger portion of a small circle attached to a small portion of a much larger circle. This form gives it, when any thing acts on its point, an inclination to recede from the object, its common centre falling much more within

the line of the barb than in the other varieties. The form of the barb is also injudicious, describing too extensive an angle with the hook, by which a considerable impediment is placed to its entrance into the flesh of the fish; and particularly so in the practice of fly-fishing, where this hook is often found to prick without securing its objects. The Limerick hooks are however, we believe, now somewhat altered in this respect, but even yet not sufficiently so to be perfect. These hooks, however, are commonly well manufactured, and we have met with some anglers who prefer them to all others for their temper; and among these is the distinguished author of *Salmonia*, who says, "I never use any hooks for salmon fishing, except those which I am sure have been made by O'Shaughnessy of Limerick; for even the hooks made in Dublin, though they seldom break, yet they now and then bend; and the English hooks made of east steel, in imitation of the Irish ones, are the worst of all. O'Shaughnessy is, I think, a better maker than his father was, and the curve and the general form of the hook are improved." Since Sir Humphry Davy wrote this, the O'Shaughnessys have not disappeared, nor yet the high reputation of Limerick hooks. Dublin hooks, particularly for salmon, may be considered the best, and Phillips, of Ellis's Quay, is the best maker of them. If the proper price be offered to the hook makers of Redditch, they will turn out as good ones as can be desired; and they will make them of any shape the angler may direct. Phillips's hooks are cheaply imitated, as O'Shaughnessy's used to be, and this cheap imitation cannot be relied on. The tackle-makers mentioned at p. 967. will furnish good hooks; also Messrs. Hutchinson and Son, Kendal.

2984. *The Roundbend hooks* have also their admirers. In our early angling we always used them; and if we could procure them somewhat shorter in the points, there are some sorts of fine fishing in which their acuteness of angle in the barb would be rather an attraction than an objection. We are disposed to think, also, that for the gristly-mouthed fish they would be, if shortened, less liable to be retracted than barbs which project; but in leathern-mouthed fishes they are decidedly objectionable in every respect. Their *butt*, and the part to which the barb is attached, forming nearly parallel lines, render them preferable to the Limerick hooks in not retreating from the bite. They are good for worms.

2985. *The Sneek-bend* projects laterally in its *barb* from the parallel of the *butt*, diverging gradually from the bend about the eighth of an inch to the right or left of the shank, commonly the left. The angular form of the bend gives an unnatural appearance to the worm when on this hook, thus making it objectionable for worm-fishing, but less so for gentles. The angular form of the bend renders it also unfit for paste, as we have often had occasion to notice, the square corner bend being difficult to be hid by the paste, and liable to be soon washed bare by the action of the water. They are best for flies.

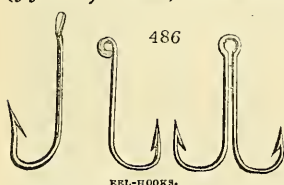
2986. *The Kirby hook* is that which is in principal use by English anglers. It has some enemies, who attribute to it that it fails in *striking*, and inflicts such an incision as frequently to allow the hook to make its way out by the opening at which it entered. But we have sometimes found on inquiry that the Sneek-bend, with its lateral projection, has been the hook complained of, and has been mistaken for the Kirby. The circular form of the bend of this hook, yet inclining slightly to an angular flexure about its centre, we think peculiarly favourable for *retaining* a fish when hooked.

2987. *A good hook* should stand straight, and be long in the *shank*; whatever portion is superfluous for dressing a short bodied fly on can easily be taken off with cutting-pliers. Some flies, as the drake-fly (*Ephemera*), the stone-fly (*Perla*), and the Harry-long-legs, require to be dressed very long in the body, and therefore call for long shanked hooks. A long shank is likewise necessary for worm-fishing; and if it taper off a little, it offers a neater dress for a fly, and a neater whipping for any other bait. Small indentations should be made on the shank to sustain the gut. Look well to the point of each.

2988. *The examined hooks* should be kept carefully separated, and not jumbled together as they frequently are, to the utter destruction of the keenness of their points. The best mode of doing this is by means of a flannel book, with any number of folds or leaves. When the uppermost fold is turned back, insert the barb of a row of hooks through the flannel or woollen cloth. When full, turn this over, and the barbs in it will then exhibit themselves in regular rows on the other side. It will be obviously important not to insert any more hooks in the next leaf, as the hooks so placed would interfere; but into the next one beyond this place another set, and so on in each alternate leaf. To disengage a hook take it by the bend, and draw the shank through the flannel or cloth, which should be of sufficient thickness, but not too close in its texture. It should also have each leaflet smeared over with almond oil or fine olive oil. This will be found to be the most simple, convenient, and efficient mode of keeping hooks, and corresponds exactly with the leafy needle-cases of the ladies. Other subordinate varieties of hooks are also manufactured for barbel, eels, and jack, the latter of which will be noticed hereafter.

2989. *Barbel hooks*, so called from being much used in barbel fishing, are equally employed in many other instances, as will appear from our frequent mention of them in the course of our work; indeed, our opinion of them is such that we would recommend the hook manufacturers to make them as low in the scale as the others. They differ from other hooks only in being made of much stronger wire, by which they gain an increase of strength without a correspondent increase of linear dimensions; in other words, the capacity for resistance in a No. 3. barbel hook is equal to that of a No. 1. hook of the common sort; and this is evidently of much consequence on some occasions, where the fish, though large, strong, and violent, is very wary, and has a small mouth.

2990. *Eel-hooks* form also a separate variety, and are made either double or single (fig. 470.). These, like the barbel hooks, are made massive, and are less highly tempered



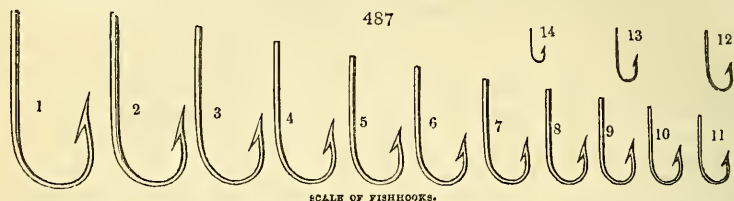
than the usual hooks, that they may not snap by the struggles of these fish. The bend is usually rather square, the shank short, and the point bent inward to avoid scratching the eel in its suction of the bait.

2991. *The history of hooks* for fishing might furnish the antiquarian with many hours' amusement; and the economist might be pleased to trace their gradual improvement from the earliest notices of their use to the present time. The classical student will find them frequently mentioned in

the writings of the ancients; and the scriptural reader may find several reminiscences of them on reference to the introductory chapter on angling. (P. 959.) It was not however, until the conversion of iron into steel was perfected, that fishhooks could have been any thing like the efficient article they now are; at once sufficiently minute to deceive the most wary of the prey, so finely pointed as to enter deeply and insidiously, and yet strong enough to retain whatever they have entered. When, therefore, Prince Rupert invented the art of tempering steel, he conferred an incalculable boon on the angler. Mr. Charles Kirby was probably a manufacturer of ironware at that time, and, among other articles, of *fish-hooks*; for we are told that this inventive prince communicated the art to Mr. Kirby, who from his instructions first manufactured steel hooks, and that in his family the secret (if any secret it can now be) remains. Certain it is, that *Kirby hooks* are still in high estimation and extensive

demand. Did our limits permit, we should have much pleasure in laying before the reader the figures of the olden hooks appended to the *Treatyse of Fysshynge with an Angle* of the Benedictine Dame Juliana Barnes or Berners, together with her instructions how to become "crafty" enough to manufacture this part of fishing "harness."

2992. The hooks now used by anglers are, however, so essential to our purpose, that we have exhibited them on one cut in their various numbers, from 1 to 14. As on the ma-



terial of which a hook is made the angler's success so much depends, it is very necessary that each hook be tried before it is appended to the line. Every fishhook should be manufactured of a proper temper; that is, so as to resist all ordinary force applied without snapping, and be equally tempered not to snap. To try the points, apply the thumb nail to them, and if they neither bend nor break, they are fit for the purpose wanted. The general strength of the whole hook may be judged of by inserting the point of one in a cork, and, forcing it, keep each hook separately inserted into the flannel with which the hook-hook should be furnished, whether the hook be gimped, or gutted, or unarmed.

2993. The dyeing or staining the gut or hair for lines, forms a prominent feature in almost every work on angling. Our own experience, however, has never allowed us to attach so much importance to this matter as some do. It is nevertheless evident, that the line used and the water fished in should not be totally unlike in colour. Of whatever material therefore a line is formed, if it be not already of the colour of the water usually fished in, it should be dyed to that colour; and if the accidental changes, to which the neighbouring waters, from floods or other causes, are known, varieties of lines, coloured to represent such changes, should be kept. Dyeing is a chemical process, and consists in combining a colouring matter with hair and similar animal substances, as silk, gut, &c. for the purpose of changing their colour. It is not difficult to stain the articles which the angler usually employs with vegetable juices, as alder, spinach, walnuts, various gums, tans, tea, coffee, &c. &c.; but the action of water soon washes out the colour, unless some mordant be applied to render it permanent; and the reason therefore why alumine (*common alum*), or sulphate of copper (*copperas*), appears in most of the receipts is, that one or other of these are generally used as mordants to the colouring solutions of vegetable, mineral, or animal matters, by the intervention of which their colouring properties are received and become permanent. The methods employed to dye your lines may be gained from many of the old works on angling, to which we would refer the reader, it being a matter of some importance to his fishings. Warm ink and water is the simplest dye.

SUBJECT. 4. Whipping, Knotting, and Tying on Hooks.

2994. Of whipping. This forms an important part in the fishing-tackle maker's operations, and consists in surrounding with twine, thread, or silk, some original substance, either to strengthen it, as in the case of a cracked rod, or otherwise to attach different substances to each other as the splicings of a rod, its rings, &c.; or to unite links of hair or gut together, or the hook (1.), to the line. The whipping is likewise itself usually further strengthened and rendered more adhesive by means of wax. Shoemaker's wax, as the strongest common adhesive matter, is generally employed for the purpose; but a white wax, yet to be described, is in some cases to be preferred on account of its colour; in all others nothing equals the shoemakers' wax for the angler's use. The article for whipping is to be firmly held in one hand (in fly-fishing a small vice, or a pair of pliers, is sometimes advantageously used), and the turns are evenly, closely, and tightly carried around it with the other: after which, to prevent its again unwinding, it is to be fastened off with the *hidden knot* or tie. When a knot is thus whipped, it is not uncommon to cover it afterwards with a slight coating of wax, tar, or varnish, which greatly preserves it. For whipping various silks are required, and the angler would do well to furnish himself with them from some silk-furnishing shop, where they may be procured in all their varieties, from strong twist to that of the finest possible kind: some of each should be kept on a winder properly waxed; the finer sorts may be waxed in mass, as directed hereafter. Prefer a light coloured silk for waxing, and avoid black as being notoriously rotten; but all the different colours ought to form part of the budget. The London anglers were used to furnish themselves with silks from Mr. Clark, at the Golden Leg, Southampton-street,

Strand, but recently the most celebrated fly-makers, and who will not work unless with the best tying silks, have recourse to the warehouse of Pearsall and Co., 145, Cheapside.

2995. *The hidden or finishing knot* forms the *fastening off* of whipping, and has already been noticed in our directions for the mending of rods. It differs only in being applied to a smaller diameter, and in not allowing the use of the fingers to lap over. In small whippings, therefore, when arrived within three or four turns of the finish, lay the point of the whipping silk under the thumb, and then continue the turns firmly and evenly around the inverted end held by the thumb; which turns being finished, take hold of the end, and draw it tight under the lapping, by which the whole whipping will be effectually secured from unravelling. A minute pellet of wax may be pressed over the cut point of silk, or, in preference, the whipping may be rubbed altogether with it, or touch the end with a small drop of hard brown varnish, and as it dries smooth it between the fingers. It is thus that all the lappings of the best fishing-tackle, with very few exceptions, are finished; nor should any line be used without having every joint whipped: an unwhipped joint is unsafe, and cuts the water doubly.

2996. *The half-hitch knot* is used to keep those matters steady and in their place, on which something remains to be done or added, and therefore is never considered as a complete fastening. It is more frequently employed in fly making than in bottom tackle-work: in the former it is constantly in use. To tie it: when a whipping has been continued as long as is necessary, a single looping is then made by passing the end under one turn only of the thread or silk, and drawing it moderately tight, either to the inner or outer side of the whipping. The former is of course the most secure, but as it is usually applied for temporary purposes, this is not of consequence.

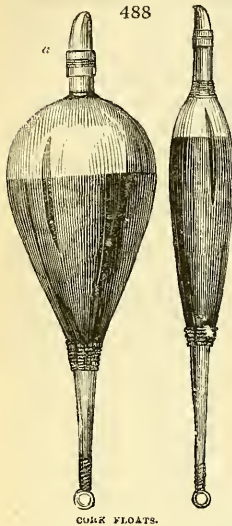
2997. *The water knot* is a valuable acquisition to the angler, and is the most effectual mode of securing slippery unyielding materials as gut and hair. It is at once simple and not bulky, and when made properly it never slips. It is by this tie that gut and hair lines are united each to their several links. It is also used to tie the small snoods of hair in line making. To make it, first soften the gut in water (hair requires it less), and then pass the ends to be joined around each other twice or thrice instead of once, as in the common *knot*, draw them together in the usual manner. If the gut be properly softened, twice passing the ends over each other makes the neater knot. Observe, that when two or more pieces of hair or gut are to be tied to other two or more pieces, to prevent any of them from kinking from the rest, as the knot draws, keep the threads evenly together. It now remains to cut off the ends about the eighth of an inch from the knot, with fine pointed scissors or a knife; but if with a knife, the nail or a piece of quill should be inserted under the ends, to avoid injuring the line. This done, whip down the protruding ends on each side with strong but very fine silk well waxed with the white wax, and fasten it off with the hidden knot. A minute pellet of wax may be pressed into and rolled around the whipped part, until it becomes thinly but uniformly coated with it: this will not only strengthen the tie, and keep the silk from rising, but will also prevent all chance of the knot hanging in weeds, &c.

2998. To tie the hook to the line requires much nicety of practice, and the best materials. The silk employed must be at once fine, strong, and well waxed. First, whip round half the shank of the hook from below to the top, which is intended to guard the gut from being cut by the hook; now place as much of the smaller end of the gut length on the inner side of the shank over this guarding, as will reach to opposite the point of the hook, and commence whipping it very closely and evenly, pressing the turns together every now and then by the thumb nail, observing that the force used in winding be not such as to draw the gut round, which, without care, it is apt to do. When the whipping has been carried down the gut, leave three loose turns, then by inserting the silk end under them and drawing it tight, the whole will be secure. A small quantity of tempered wax may be held between the finger and thumb, and rubbed over the whole from the lower part of the shank upwards, which will make a uniform surface and strengthen the attachment. When by use the whippings lose their coating of wax and begin to fray, it is an excellent practice occasionally to pay them thus with a fresh coat by the same means. A small quantity of tar, lightly and evenly painted over the hook-whippings and the knottings of the gut, and then left to dry, has a better effect than varnish, and forms an excellent preservative.

2999. To arm a hook with a bristle, it is necessary that, after two or three turns of the waxed silk have been made for the purpose of securing the gut to the inside of the shank, on the outside or back part of the shank about half an inch of stiff hog's bristle be placed, leaving somewhat less than a fourth part without the binding and pointing upwards, so that it should present a very little projection beyond the top of the butt of the hook. This effected, continue the whipping of both gut and bristle to the hook, as already directed, observing, as the whipping proceeds to its finish, to pare off, or thin, both bristle and gut, so as to leave as little bulging as possible; by which precaution the bait, whatever it may be, will slide over it more readily in baiting the hook.

SUBJECT. 5. *The Float, Shotting the Line, &c.*

3000. *The float (fig. 488.).* A philosopher, were he to commence fishing remote from the metropolis, would hardly imagine the expense and trouble employed to bring these



piscatory articles to perfection, nor the limits by which that perfection is bounded among the London bottom anglers, particularly in roach fishing. We have known several amateurs so extremely particular in the manufacture of their floats, that they have ransacked (by their correspondents) the foreign markets for swan's and porcupine's quills, reeds, &c., but particularly the former, with an avidity truly surprising. We have seen floats valued at half a guinea each, but of which the original cost of the materials would exceed twice that sum, and even ten times the amount, if the value of the time lost in procuring them were taken into consideration.

3001. *Every float should swim critically true*, and should show itself above the water, more by obvious character than by its size and height. If too clumsy it will alarm the fish, if too tall every eddy will disturb it. A good float will indicate the smallest bite.

3002. *Floats are made of various materials*, as cork, reed, wood, and quills, which latter are obtained from the porcupine, swan, goose, and duck, particularly the Muscovy. Some fanciful anglers, it is said, use the bustard-quills, under an impression that their spotted appearance may be mistaken for flies. Such is the sapient reason assigned, but simple as we fishermen are, and our venerable father Walton gloried in our simplicity, there are none so ignorant as not to be aware, that neither are these quills variegated to any degree to be distinguishable by the fish, nor are they sought for on this account, but from their supposed durability and capability of resisting the softening effects of wet.

3003. *Floats differ much*, according to the nature of the water fished in, the kind of fish angled for, and the state of the weather in which they are employed. It is essential to success in fishing, that the float be perfectly adapted to what is required; thus, in deep rapid streams, a float must be used of much buoyancy, as one of reed or of cork; for it is evident that not only does a cork float, such as the largest of those figured, offer much resistance to the rapidity of the stream, but it has also to counteract the great weight of lead necessary to carry the bait to the bottom in this case, and so prevent the too quick passage of it over the ground when it has arrived there. When there is a great ripple in the water, it is evident that rather more than usual of the tip of the float should be exposed, or the violence of the stream may wholly hide it. In very extensive waters, large floats of wood surrounded with cork are sometimes used; and in lakes, small bladders of lambs, pigs, &c. are employed, particularly where a boat is used for roving fishing. Live baits likewise require a float of buoyancy and size equal to the resistances of the bait.

3004. *The fish angled for* should be considered in the choice of a float; thus, roach and dace can hardly be fished for with too fine or light a float, as seen in the new river. Gudgeons also require the same in till waters. Bream, from their manner of biting, will take a somewhat larger float; and for perch it requires one still more buoyant, according to the depth of water and the kind of bait used. In sea fishing the nature of the fish, and the depth of the water with its unsteady surface, require a conspicuous and very buoyant float when one is at hand.

3005. *The state of the weather* must also influence the choice of the float. Whoever has fished on a lake or mere in a windy day, at which time the best perch are often taken, will know the necessity of a powerful float. We have often also angled with advantage for tench, perch, and even roach, dace, and bream, in drizzling rains in warm weather; but we always at such times found it necessary to use a somewhat larger float than usual, not only to make it more conspicuous, but also from the peculiarity of manner in the biting of the fish, which is at these times particularly quick, hurried, and apparently capricious.

3006. *The cork float (see fig. 488.)* is compounded of cork and swan quill, or of cork, quill, and wood. A piece of the best velvet cork is first bored through with a hot iron, into which hole is introduced either a *double quilled float*, or a wood plugged float (to be immediately noticed), as the case may require. This is to be done in such a manner that about an inch of the quill may appear beyond the upper part of the cork, and the remainder outside the under part. Before the quill part is introduced it should be smeared with tar, varnish, or any other adhesive matter not affected by water; and if this be done while the cork is hot from the boring, it will the sooner set the work. A porcupine quill (2, fig. 488.), to be presently exhibited, is sometimes used instead of the swan or goose quill, and is a variety of float possessing both strength and neatness. The figure and dimensions of the cork must of course depend on the fishings for which it is intended, observing that a general model of its form exhibits two cones united together by their largest diameters at the centre of the float, embracing one the upper and the other its lower portion. The buoyancy of the float will of course depend on the extent of the diameter of the cork at the junction of the two cones, bearing in mind this principle, that a large cork float adapted for much resistance to either the weight of lead, the action of very large live bait, or of a powerful wind, eddy, &c. requires the diameter of the upper cone to be by far the most considerable, and tapered off more suddenly than the lower, giving it an appearance of a boy's top (a, fig. 488.).

From this size and shape of float the first remove presents one of less dimension, with a cork less bulbous than the last, but with the upper cone still somewhat larger than the lower, fitting it for sustaining the struggles of a gudgeon, bleak, or dace, as a live bait, in mild currents and deep waters (*b*). The next size cork float tapers from the centre to both extremities, and is also adapted for deep waters, or for minnow live bait fishing. This finest cork float is sometimes used for roach fishing in very deep waters, where much lead is necessary to sink the line, and particularly if there be current present. If the water be very still, this float, instead of being furnished as the preceding with a bottom ring, may be formed of a double quilled float, and tip capped at both ends (*3, fig. 489.*), which will make it appropriate to fine roach angling in very deep but tolerably tranquil streams. Such a float will be sufficiently buoyant to sustain any leading, and yet capable of giving warning of the slightest bite. But in all instances which require a forcible stroke to insure the fish when the bite occurs, as must be the case in eddies and rapid streams, a ring at the bottom of the float is to be preferred, to prevent breaking the cap of the tipped cap-float, which is very likely to happen when a smart and forcible stroke is made.

3007. *Plugged floats, or single-quill floats* (*1, fig. 489.*), are the most common and the cheapest that are used; they are, however, when well made, very durable and convenient, and are manufactured from a goose quill, or, when it can be procured, a swan's quill, by first abstracting all the soft part, taking nothing but the transparent quill itself. A small piece of pitch is to be then introduced and pressed down, which completely closes the ends; on this place a morsel of white wool, and over this another piece of black pitch, to make security double. Shape a piece of deal of about two or three inches, so that nearly an inch of it shall fit closely into the quill; to retain it in which situation, first dip it in waterproof glue, or otherwise, into a cement formed of bees' wax, resin, and chalk, in equal quantities; in default of these, cobblers' wax, or even tar, may be substituted. It would however be prudent, first to prepare the lower end of the wood before it is sufficiently tapered by boring it with a fine awl, so as to make a hole about an inch up. Prepare a ring by twisting a thin brass wire around a large bodkin, or small part of a tobacco pipe. After this, having with a pair of pliers again twisted the remaining ends of the wire into about an inch of a screw-like form, insert it into the hole in the plug and screw it up, and then taper the wood off to the thickness of a crow quill. We give these instructions merely to assist the young angler, or any other one who may accidentally be out of the reach of a fishing-tackle shop, for in all other cases it is prudent to buy, as being cheaper and safer.

3008. *A double plug float* is occasionally used when it is required to plumb the depth very frequently, as is the case when the water is rising or falling with the tide, and when no success can be expected unless the bait trails exactly at the bottom, as in gudgeon fishing. In this case, and that only, is such a float admissible. It is of simple construction, being formed of one central tube of quill, plugged at each end with wood and ring. Its greatest inconvenience arises from the care with which it must be put into the water, to prevent its slipping, but which may be somewhat remedied by bending the upper ring, so as to let the line press on it.



3009. *The double quill, or tip-capped float* (*3, fig. 489.*), a favourite with many anglers, is made of several pieces of quill graduating from one central portion, of which the diameter is more considerable than the others. This first portion is commonly made from the very largest swan's quill that can be procured, which receives within it a lesser swan's quill at each end, which ends are each of them likewise fitted with a goose quill, and to the end of each of these there is also adapted a small quill point, unless the owner's fancy should direct that it be more expensively and carefully terminated by a narrow pointed portion of ivory or tortoise-shell. This float is much in use among professed bottom-fishers, particularly for roach and other fine biting fish, as carp, tench, &c. Its advantages are, that by its shape it sinks at the least possible bite; and the same form makes it less liable than any other to disturb the waters of ponds, or the still deeps of rivers, rendering it by these circumstances particularly calculated for use in angling for all shy fish. The cap of this float should be made of a strong Muscovy duck's quill, and it may be coloured or not, according to the fancy. It has been observed that those floats which are made rather bulky a little above the centre, swim the steadiest in weather blowing against the stream, in rough eddies, and at the tails of mills.

3010. *Reed floats* are also sometimes used by anglers in fine fishing for roach and dace in deep waters. They require to be carefully stopped in the joints, to give them the only merit they possess over other floats, that of lightness and buoyancy. The mode of manufacturing them is exactly the same as that of the swan's quill float, and they are invariably tip-capped; but they are, when of the best kind, expensive articles, as the reeds are usually not of English growth. Such are the principal floats employed in bottom-fishing; others are used of various makes, for every thing serves for a float which is buoyant enough to hold suspended by its means a line armed with a hook and bait: some of these buoys we shall notice hereafter, in treating of the irregular methods of catching fish.

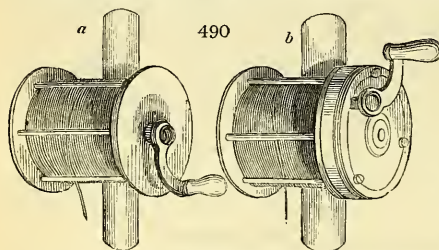
3011. *Of shooting the float or line.* This necessary appendage to a float line is required to bring the buoyancy within such a level that not more than half an inch of the float may be seen above the water in fine fishing. In rapid eddies, and when live baits are used, the float must be leaded according to circumstances. *Shooting a float* is, in fact, shooting the line, although, strictly speaking, it is the float that governs the shot, and therefore ought to give name to the process. We have before had occasion to observe, that the fishing-tackle makers are too apt to employ a few large shot to their lines, instead of many small ones; but this practice is extremely injudicious and hurtful. The difference between two lines, one fitted up with small shot, as we would recommend, and another fitted up with large shot, as is but too common, will be at once apparent, and its consequences can be no less obvious. When we take such pains to conceal ourselves, to conceal our hooks, and to lessen our line or alter its colour, as well as to taper our float to all possible tenuity, and then present to the fish such leaden masses as are sometimes seen on floated lines, can we wonder that such shy subjects as

carp, tench, roach, &c. should be rendered still more shy by such an exhibition of snares, and that so few are thereby thus taken? It is our own custom to put a few very fine shot in the middle of the hook line, or about five inches from the hook, which will keep the bait down, and assist in steadying the swim. About nine inches from the hook we place another row of shot close together, and rather larger than the preceding; and, if necessary, we add another row of still larger shot above these, at about four or five inches' distance. The shot used for this purpose require to be nearly split, which may be done with a chisel or knife; but it is better to purchase them already split from the tackle makers. In fastening them on the line, make use of a pair of pliers, and place each shot as near the centre of the line as possible, taking care to close it evenly, to prevent the projecting portions from rippling the water or catching the weeds. It is a bad practice to bite the shot to fasten them; the semi-diameters of the shot frequently slip aside, or are made ragged by the teeth; and it not unfrequently happens that the line itself is bitten through. As a means of strengthening the float, but more particularly of preventing the line from slipping, where it is necessary to be extremely accurate as to depths, one, two, or three turns, with a half-hitch, are made around the top of the float by the line before the cap is put on.

3012. *The hook is usually added to the line by a loop made in the gut to which it is attached, which is convenient where there is a chance of having to change the hook repeatedly; but when very fine fishing is practised, and when every thing must be as snug and fine as possible, it is best to attach the hook length to the line by a knot, or in the hands of the expert angler a suitable hook may be at once whipped, or at least tied on the end of the gut line, which is much the neatest and most efficient manner of operating.*

SUBJECT. 6. Reels, or Winches.

3013. *The reel or winch (fig. 490.).* This is also an indispensable requisite to anglers on most occasions, perhaps we might say on every occasion; for although in very fine



LINE REELS.

fishing for dace, roach, &c. it is often dispensed with, and is by some thought burthensome, yet the experience of every angler will inform him, that unless fishing in the New River at Islington, in a gentleman's gold and silver fishpond, or other quiet and harmless situations, he can never insure himself against hooking a fish of which he did not meditate the capture, and which without a reel he has no means of taking. As under such circumstances, the non-expectance of such a visiter would heighten the pleasure of

his call, so he disappointment would be doubly mortifying if, instead of being a gainer, the angler found himself minus hook, line, and perhaps float. With the exceptions, therefore, above stated, and similarly interesting ones, we would recommend the prudent angler to be always armed with a reel and a running line; he will then spare himself the mortification which we have had occasion more than once to feel before we adopted the course we recommend.

3014. *The mathematical principles on which the reel and running line act may be easily developed, so as to show their importance as an auxiliary in the capture of fish, particularly of large and powerful ones.* We will suppose a very heavy fish to have been well hooked; he immediately runs out a considerable quantity of line, instinctively to fly from his enemy, or to break the detaining cause; but happily, as his distance increases, the more he adds to the certainty of his capture; for the farther the restraining force is removed from him, the more is the power of that force augmented, and his exertions are paralysed by acting on the united elasticities of the line and rod, which, if both be firm, and the arm of the angler be sufficiently strong to raise his rod, thereby to transfer the resistance of the fish through the united line of elastic forces opposed to it, the prize is his own.

3015. *A reel is also often wanted to shorten more than to lengthen the line, as in daping with living flies, or dropping a live or dead bait in confined situations, as in pike and trout fishing, but particularly the former.* It is now some years since the various means of lengthening or of shortening the angling line among professed fishermen, settled into the use of the reel or winch, which at present generally occurs under two forms, the common or single reel, and the multiplying reel, with or without a stop to its rack wheel.

3016. *The single reel, plain pillar reel, or winch, is now but little used by anglers in the south of Britain.* Its form and use are sufficiently well known (*a, fig. 490.*). It is certainly much more slow in its operations than the multiplier; and when a fish returns to the hand suddenly, as is not uncommon, it is often of the utmost importance to regain the slackened line with the greatest dispatch, which the single reel cannot do, so it is further objectionable, for no fish beyond one of a pound weight can be a secure prize without being completely under the control of the line. But even with these disadvantages, the plain pillar reel is greatly preferred by many anglers in the North and other parts where heavy fish are taken; and very justly, for with all our southern attachment to the multiplying reel, it must be confessed, that when a salmon, or other very large fish, is on the line, this reel will be found to be totally inadequate to the task of moving it. The wheels, by the extreme pressure of their surfaces, catch and feel clogged simply by the friction. We have found a fish of only four or five pounds, when lively, strain and clog the action of the common sized multiplying

reel. What then is to be expected from a salmon of twelve or fourteen pounds? No force applied can wind up the line in such case, but it may readily break or bend the works. The sole resource in such case is to draw the line up with one hand and wind it with the other; in doing which, a sudden slackening of the line may enable the fish, at one plunge, to disengage himself. Until, therefore, some improvement is made on the multiplying reel, many anglers will continue to use the pillar one; and when it is made sufficiently large to support a large pillar and a proper quantity of line, it may, when judiciously managed, act quick enough for all ordinary purposes, compensating, by its safety and the steadiness of its pull, for less speed in its action.

3017. *The multiplying reel or winch* (b, fig. 490.) possesses however, in many circumstances, great advantages over the single pillar winch, particularly for moderate resistances. An important one is the increased velocity with which it veers out or takes in line: but to prevent disappointment in our expectations in this particular, it must be remembered that the quantity of line let out or taken in is by no means uniform throughout the operation. On the contrary, when the barrel-reel is charged with a considerable volume of line, its powers are relatively augmented or diminished very considerably; that is, it winds up or lets out a given quantity in much less time when full than when nearly empty, for the proportions increase or diminish as the barrel becomes charged with or as it discharges the line, it being clear that a revolution round the bare barrel of the axis can relieve or discharge but little line in proportion to one round of the same when three-fourths are filled with line. Many improvements have been suggested by ingenious anglers, and some attempts have been made by artisans; but the multiplying reel in common use has still the disadvantage of a want of power when any resistance is offered beyond that of a moderate-sized fish, as may be easily brought to the proof by attaching a piece of wood of only two or three pounds' weight to the line, and allowing it to float twenty or thirty yards down a tolerably brisk stream.

3018. *Of the two varieties of multiplying reels*, one with the crank or winch in the centre of the box, and the other where it is placed at the side; the former is certainly the best, not only because the handle is much more advantageously situated, but because it more readily admits of an improvement in power and expedition by a larger cog-wheel. We suppose it must be something of this kind to which Mr. Bainbridge alludes, when he says (*Fly-fisher's Guide*, p. 41. 2d edit.), he has "had a reel constructed on a new principle, which succeeds much better than multiplying reels upon the old plan." By means of a projecting box he informs us, that he has been enabled to introduce a larger cog-wheel, and, consequently, to obtain an increase of power as well as of velocity.

3019. *The multiplying reel* is made either with or without a stop, or, as it is sometimes called, a *lock* (b, fig. 490.), by means of which its action either way can be suspended; and if we were able to keep this always under our own control, it might prove a useful addition; but it unfortunately sometimes happens that the hand, the coat, or line, or the mere putting the rod down, or resting it against something, may lock it unobserved by oneself: when thus locked, if a large fish should seize the bait, and run out with it at once to the length of the line, the sudden check produced by the stop will probably snap it short, and then the fish is gone. In bottom-fishing, however, a stop is rather more useful, and less objectionable than in fly-fishing, as the line being usually kept at one determinate length, if the leading be heavy, it sometimes happens, unless the reel be stopped or locked, that the weight draws out more line than is proper. Recently, the multiplying reel has been very little used, on account of the fear there is that its works may get deranged if severely tested. The reels or winches now in use are click or check ones. Their play is not loose, and they hold the line at its proper tightness as a fish is darting away. They are made in great perfection in London, and the best will not get out of order for a whole season.

3020. *The modes of fixing the reel to the rod are various*. In some cases it is permanently fixed by means of screws; but this tends to weaken the rod, and deprive us of the use of the reel for any other rod. It is also unnecessary, since, by means of the plate reel, it can be made as tight and permanent as though it were screwed to the rod. The plate of this reel is made somewhat longitudinally circular, by which form it adapts itself to the rotundity of the rod, and when not fixed into a groove is either fastened to the rods by tapes running through eye-let holes made in the plate, or else by waxed twine, which is preferable from the tendency of the reel when attached by tapes to slide towards the lessened diameter of the joint. In this mode of attaching the plate reel, there is an advantage over the *groove fastenings*, which is, that the same reel may be used on any sized rod, and on any part, or indeed on any joint of a rod which is convenient, as every angler is aware that the reel requires to be differently placed (at least it is advantageous so to place it) on the same rod, according as one kind of angling or another is practised. In trolling, or in bottom-fishing, the reel should be attached to the rod about ten inches from the butt end: in fly-fishing, this distance would tend to make the action of the rod untrue. It is therefore placed generally about five or six inches from the butt end of the fly rod. Some sportsmen, however, place their reel above the part of the rod they handle, even in fly-fishing. Colonel Hawker recommends this, and also that the reel, instead of being under the rod, should be placed above it. We are forced to differ from the colonel, though his authority carries great weight with it. We consider the check that the hand has on the line to be very advantageous, provided it be lightly held; nor is there, in such case, the smallest danger of breaking either rod or line by striking the fish, even in trolling for jack or minnow spinning, for in either of these fishings, of necessity the stroke must be sharp.

3021. *The plated reel* is fastened to the rod by means of a groove, which receives its plate under a fixed shoulder or ring, and when closely adapted to the groove is fixed and made steady by a movable shoulder or ring, which slips over and secures it. When the plate-groove and rings fit accurately, it is not possible to contrive any thing more convenient. We have one of these plated reels which has been in use at very many of the rivers of note in the united kingdom. It has remained attached to one rod for fifteen years, and is yet firm and good. In place of brass collars for holding fast the reel plate, two leathern ones are sometimes substituted, which being first wetted are, as they dry, found to adhere firmly.

3022. *Reels are frequently likewise fastened to rods by means of a brass hoop and screw*, which hoop being lined with leather, prevents the rod from pressure and the reel from slipping. The hoop is usually made smaller than the butt of almost any rod, purposely to leave room for the screw to act in pressing the hoop tight around the butt. This hoop and screw fastening has likewise the advantage of fitting any rod, and

almost any part of a rod (at least it may be attached to the joint nearest the butt) enabling the angler in confined situations to abandon the butt length and fish with the remainder. The large flat wheel of eight or ten, or even more, inches in diameter, used in France, and indeed in Wales, Ireland, and on some Scotch lakes, we shall not stop to illustrate.

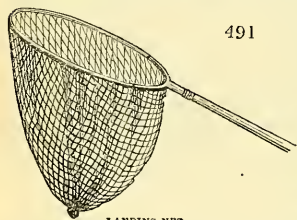
3023. *To place the reel on the rod*, let the groove (if one be made) be in a line with the rings; or if it be otherwise fastened, it must obviously be placed on an exact line with the rings, and under the hand, with the handle of the reel pointing to the right or left, as may suit the hand of the winder. When the reel is attached near the butt, the last ring should be placed nearly two feet from it; in which case the line will work freely, provided it be carried over the bar of the reel which is nearest to the ring; but if this first ring by any chance should be placed nearer to the reel than this, the line will work more freely by carrying it through the ring from the under part of the reel. This is a matter worthy of more attention than may at first appear, or the friction of the bars may soon fray the best line, as well as impede its action.

3024. *Various substitutes have been used for reels*. The most simple is that of two tenter-hooks, pointing outwards, placed on the butt of the rod, the lowest hook two inches from the place of holding the rod, and the second at the distance of eight, ten, or twelve inches above. This homely method may answer for trolling, and for dipping or daping it may make a moderate substitute; but in fly-fishing it is found but ill calculated to afford the angler assistance, either in *giving out* or *taking in* his line, particularly in giving out; and for the two handed rod it is totally unfitted and troublesome, as well as dangerous.

3025. *A large flat wheel reel* is in common use in some parts of France, and occasionally also in England. Those used in France are cumbersome and unsightly in the extreme, being merely a large turned wooden wheel, hollowed in the middle to lighten it: sometimes it is even formed of wicker-work. The wheel is fixed to the butt by a pivot, and is deeply grooved around its circumference like a pulley, for the reception of the line. Two tenters, pointing towards each other, are driven into the butt just beyond the edges of the wheel to keep it flat. The wheel may be of any moderate size, but rarely exceeds six inches in diameter, and is turned by means of a neat peg screwed into it at about two thirds' distance from the pivot to the edge. It is obvious that a wheel of six inches' diameter will, at one turn, give or take in a foot and a half of line, which is more than any of the brass reels of our country, even when the barrel is nearly full, can do in three turns.

SUBJECT. 7. *The Landing Net, Gaff, Clearing Ring, Drag-hook, Disgorger, Minnow-net, Minnow-kettle, Fish-pannier, Fishing Pocket-book, &c.*

3026. *The landing net* is a very necessary implement to the fisher, and is manufactured very differently in point of size and materials. The landing net for the usual fishing should



LANDING NET.

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be, when properly hung, two feet in depth, and not more than one in diameter. These dimensions for ordinary purposes are not too large, but for some fishing might be thought diminutive; but as there are other means of securing large fish, a moderate sized landing net is sufficient. Let the meshes be small enough to detain a large minnow. The net in our figure is not proportionably so deep as its width requires. We also append a jointed steel frame, which makes the net portable, inasmuch as it folds up, and may be carried in the pocket. We have for some years used a landing-net of our own making, and if

self love has not blinded us to its defects, it is at once simple and efficient. It consists of an iron hoop, from four to five or six feet long, which, when lapped over one foot of its length and riveted, serves, by being double, to strengthen the part opposed to its attachment to its shaft. The centre of this being perforated through the over-lappings, is fastened to the shaft (a stout hazel about five feet long) the larger end of which being ferruled and carefully bored, receives it by means of a long nail with a broad head, or a spike purposely made. Previous to fitting up the hoop, it was first drilled with holes towards its lower edge, about three quarters of an inch apart, by which the heading of the net is lashed with strong waxed cord within the inner side of the rim, after which the iron and the lashing were well painted over, which has preserved it well. Our own is rather oval, being fifteen inches one way and twelve the other; the shorter diameter being that nearest the hand, the strain on it is thus diminished. This net would be improved were there a shoulder to hang it by made within the hoop, through which means friction would be still more certainly avoided. The advantages of such a landing net are, that it is light, strong, and not likely to be out of repair. It also derives another convenience from its hoop edge, which makes it a most useful machine for dredging raddies or minute shells, &c. from the bottom of the water, a capability which first suggested our manner of making it. The handle is fitted up with a ferrule and female screw, into which is fixed a common spike to fasten into the ground, or assist in wading. In our tackle bag we have one or two conveniences which we can at pleasure adapt to this by unscrewing the spike, such as that of the single or double gaff-hook, or the telescope handle noticed below, either of which is a most useful article to disengage a line, detach weeds, or insert into the gills of a fish, when the landing net is not at hand, or cannot be so conveniently used. We cannot too strongly enforce on the angler the imperative necessity there is that he cultivate a convertibility of talent, both mental and manual. In angling for salmon, the landing-net must be very large, and its hoop and handle very strong. The diameter of the hoop should be from sixteen to eighteen inches, and the net should be deep in proportion.

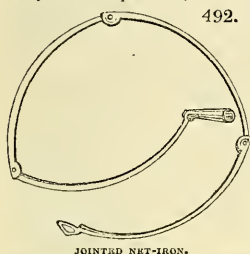
A telescope landing net is used by anglers who travel considerable distances, in carriages or otherwise, for their sport, or by such as delight to have every thing snug and packed in a small compass—contrivances in which the London anglers excel all the world. A London angler's case, by its excellent contrivance, will hold in a remarkably small space a vast variety of tackle, each article being made to prove as little burthensome as possible; and thus a landing net has been constructed, the parts of which can fold or slide into the least possible space. The net part hangs on a hoop which was formerly made of iron, but is now manufactured of steel to lessen its bulk, and increase its strength. This hoop is jointed in three parts (*fig. 492.*), by which means it can be folded, so as to be carried conveniently even in the pocket or in a bag, while a telescopic handle being *swallowed* one part within the other, is rendered equally portable. This is effected by the contrivance of two or three joints of bamboo, of such comparative diameter as to fit one within the other, and when extended, to form a handle of five or six feet in length. The great defect in the telescope is its want of strength; a heavy fish must inevitably fracture the bamboo joints; it may be dragged out. but lifted it cannot be.

3027. *The jointed net-iron* (*fig. 492.*), where a servant is employed, may be conveniently adapted to the two first joints of a spare rod, with which it is presumed every prudent sportsman would be armed, when he has a domestic to attend him. For such a purpose he will find the *general rod* (*fig. 476.*), to be a very proper one, for should any accident happen to that with which he is occupied, he will in this have a substitute, let the fishing be what it may. The jointed net-iron being in the servant's pocket, and having the meshes of the net passed over it, is at once ready to be attached to a handle, and which can be readily furnished from the lower joints of the general rod in his hand. A small ferruled joint of six-inches' length may also be kept with the rest of the tackle, into which the screw of the net ring being fastened, this joint may be inserted into the two lower joints of the general rod as a staff, by which means a most excellent landing net of great power and extent will be at hand. By this also live-bait can be taken, as minnow, sticklebacks, &c. provided the net-meshes are sufficiently small, and every net should be purposely made so to answer this double intention. Various other articles may likewise be adapted, among which the gaff-hook for extra sized fish is a necessary one, and we here strongly recommend the *double gaff-hook* (*fig. 493.*), which at once serves the purpose of a landing hook and an instrument to cut away weeds or other impediments, as boughs around an entangled line, &c. &c. These and other useful implements may be adapted to the general rod, by which the prudent sportsman will make every article subservient to numerous purposes, thus increasing his resources, and yet diminishing his wants. To be independent is the aim of all the world, and he is the most independent who can do the most with the least means.

3028. *Under this view* we suggest to the angler, who is unaccompanied by either servant or companion, the means of extending his conveniences and resources. Either by his own ingenuity, or with the assistance of a rod maker, he may very readily unite in one article a second fishing rod—a gaff rod—a landing net—minnow-net—bough-cutter—wading staff—and ample means of defence against man and beast. All these may be combined most effectively and conveniently in the form of a walking-stick rod, and but a little longer and stronger than those usually made. With a steel folding net in his pocket, and his double gaff-hook, both so made as to be attached to the smaller extremity of the rod and his spike applied to the larger, he is enabled to supply all the usefulness of these several articles.

3029. *Some directions with regard to the use of the landing-net* may be necessary to the tyro, who, when he has hooked any fish beyond one of the smallest size, should never attempt to lift it out of the water by means of the line, still less by means of the rod and line together; for although neither may break, both may be strained, or the hook may break, or the hold on the fish give way. Every one of these accidents we have seen occur through the want of a landing-net. In fly-fishing, where the line is long and there is not much space to step backward, or the reel is clogged, it is necessary sometimes to lay hold of the line with one hand; but this should be done with great caution, and then only after the fish is well-nigh spent, or one struggle may carry away line, hook, and fish. In all other cases avoid touching the line if possible; but having sufficiently played the fish, whether taken by bottom or by fly-fishing, bring it within reach of the landing-net, and then carefully conduct or slide the net obliquely under the foreparts of its body, which, if the fish be completely exhausted, will fall into it; but if it has still sufficient vigour, it will be prudent rather to slide him over the net, than the net under him. It must have occurred to every angler to have supposed a trout or salmon to be completely spent, which, the moment it has been touched by the net, or has even caught sight of the fisher, has sprung off with most annoying violence. Against such an accident it is prudent to be ever prepared by keeping the rod in an upright position, acting on a tightened line, but yet so disposed that it can run at liberty if required. When the head and shoulders or the fish are once fairly within the net, a slight turn of it will take in the whole body, and the net being then kept horizontally, will insure its safety; for with the head downwards, not any efforts it can make will disengage it from the net: but if it be received tail foremost, as is sometimes done in deep waters, from overhanging banks, &c., beware of its plunges.

3030. *Situations will occur* where the landing-net cannot be brought in aid to land a fish; for instance, when it is very large, as sometimes occurs in salmon or pike fishing, where no net in common use will contain the captive. Such a situation will show the indispensable necessity of being always furnished with a *hook* or *gaff*. But there are other occasions



where difficulties of a new kind may present themselves; for instance, in very wide rivers, having a rapid central current, but a wide course of shallows at the sides; here both net and hook often fail, but particularly the former. In the rapid stream the net cannot stem the force of the water in the single hand of the angler, where in fact both hands will be fully employed in keeping the fish up, acted on as it then is by the impetus of a strong current. In such cases it is almost equally impossible to apply either hook or gaff to the fish from the want of an assistant; and be it understood, that we are always supposing the angler to be without one.

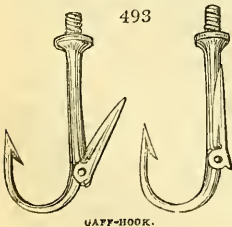
3031. *To land a fish without landing net, hook, or gaff*, requires much caution and good management, particularly if it be a large one. It is first necessary completely to exhaust the fish; it must, in the angler's language (and it is critically just), be completely drowned before any thing of this kind can be prudently attempted, as a sudden shoot when the line is at all loosened will inevitably disengage the fish. When however it is perfectly exhausted, both by its own efforts and by stragulation, it may be drawn on its side; and if the situation will allow, it may, if the angler step backwards, be gently brought from out of the water. In doing this, the necessity of its being completely exhausted will be apparent from our knowledge that otherwise, while we are thus drawing it, it may make such violent flaps with its tail against the line as to endanger it. If the line slackens, and any strength be left, it often succeeds in its aim of striking the line, and breaking either that or its hold.

3032. *In these attempts to land a fish*, it should, if possible, be conducted to a part which shelves the least, and which is altogether free from weeds; or choice may be made of some small inlet too shallow to float the fish. When it is not possible to step backwards to effect this by means of the rod and line, or where the bank slopes too much to draw the fish out conveniently, by throwing the rod back the line may be gently laid hold of, when, if the fish be sufficiently exhausted, by raising its head up enough to keep the hook from hanging to weeds or other matters, the angler may then bring it so near as either to insert a hook into its gills, or to plunge it into its sides. If the hook or gaff be wanting, fix the rod in the ground by means of the spike, and then grasp the fish firmly, if very large, with a finger and thumb pressed into the eyes; or if of a moderate size only, by gripping it immediately behind the gills; or (watching the opportunity) by thrusting one of the fingers in the gill-cover as it opens.

3033. *An ingenious substitute for a landing net* is mentioned by Captain Williamson:—"I have," he says, "sometimes got a boy to aid me with his hat; but the best mode I ever practised was that of passing a wire snare, such as is used for jack and large eels, over my line, and lowering it down until I could get it over the fish's head, when drawing the cord tight I have thus lifted fish of eight and ten pounds' weight safely to the top of the bank from places where no landing net could have been used."

3034. *The gaff* is an instrument used in landing large fish, whose dimensions are not such as to prevent their being received within the hoop-net. The gaff-hook attached to its staff being somewhat inconvenient, various ways for carrying it have been devised. It is sometimes slung across the shoulders, attached to a short staff: it is now and then fixed to a telescope rod, which, sliding into less than two feet dimensions, can be carried in a side pocket. Here the same objections do not exist as those to the telescope landing net from its want of strength, for the gaff is employed more rarely to *weigh* a heavy fish out of the water than to draw it out. But in the use of the landing net we find on lifting a heavy fish from the water that it operates, on the principle of steelyards, as a monstrous weight to the staff of the net, in proportion to its length and the size of the fish. The time when such a gaff, *i. e.* the ready mounted one, proves particularly convenient, is in pike or salmon fishing, and when the angler is alone, in which cases both hands are required to wield the rod, whether in trolling the minnow or throwing the fly, and when a spiked pole or other rod would prove an incumbrance. In all other cases the fly-fisher's gaff should be fixed on a staff of ash, yew, or hazel: fir is hardly to be depended on if much stress be laid on it, as in wading through rapid waters, where we have found the gaff staff eminently useful as a support. The length of staff may be from four to six feet: its lower end requires to be shod with a spiked ferrule, and its upper with one having a female screw socket, to receive the screw of the gaff-hook, which should be very well tempered, and may either be double or single. The gaff-hook to be secure should be barbed; it is however sometimes used plain and unbarbed; but this cannot be by any means so certain of holding the fish after it has been struck, and we have seen a salmon plunge off an unbarbed gaff for want of such a hold.

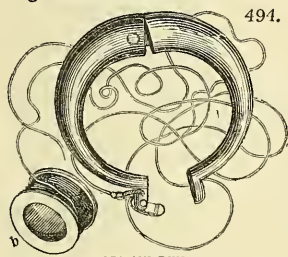
3035. *The double gaff-hook* is that we use, and which we would recommend (*fig. 493.*). It is an improvement on the old single instrument: it has a second portion fitted up with a cutting edge, by which weeds can be severed, and boughs and other obstructions removed. As this double hook folds up by its hinges, it is peculiarly convenient and portable, and is not required to be taken from off the staff to prevent accidents, as was formerly the case. If the unhinged gaff is used, it ought always to be guarded with a leathern cap.



3036. *To use the gaff*: first expend the strength of the fish to the utmost, as already directed, and when brought within reach, pass the gaff under the fish with the point directed downwards, which having been done, turn up the hook, and with a tolerable jerk pass it into the body. The ingenious author of *Salmonia* says, it should be pierced near the tail; but this is not always optional. We have rather preferred gaffing a tolerable sized salmon towards the shoulders, having, as we found, more means of combating with his resistance by so doing. Circumstances however occur, as before stated, which render this by no means a

matter of choice, and the angler may think himself fortunate if he can gaff his fish effectually in any part. After a salmon has been struck by the hook, it often happens that his torpid feelings are roused, and his plunges become desperate. This event should be anticipated, and regard had to the safety of the rod and line, particularly of the former, which if it be at all endangered, the angler had better resign his hold on the salmon; and by letting him again launch into the deep with the gaff in him, recommence playing him, which will, in a few minutes, bring him again within reach of the hand perfectly helpless and unresisting. In some cases a salmon is played until he is irrecoverably spent, and the angler will avoid plunging the hook into the flesh, but will first attempt to land his fish by passing it into the opening of the gills.

3037. *Clearing rings* are great assistants to the angler, and are made of various fashions and materials. The clearing ring is so useful an implement, that the bottom angler, particularly, cannot be considered as properly equipped without it. The most simple is merely a stout lead or iron ring, of about seven or eight ounces in weight, and two inches and a half in diameter; and to this is attached a small cord, hard-twisted packthread, or stout whipcord of about ten yards in length: the ring ought not to be uniform, but thicker at the segmental portion opposed to the part to which the cord is tied, the construction being such, that the heaviest part may most press on the opposing object. An improved clearing ring is now made with a well-closed joint in its thickest segmental portion (*a*, *fig.* 494.).



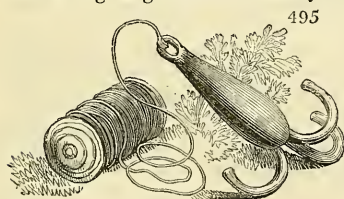
CLEARING RING.

494.

The advantage of this make is, that the ring may thereby be put on the rod beyond the reel, which the common ring cannot be, unless made large enough to pass over it, in which case it is much too clumsy. When the improved ring is placed on the rod, the movable thumb-winder (*b*) holds a line of ten or twenty yards long fastened at *c* to a neck protruding from the ring to a drilled hole in which is fastened a line of about ten yards of well twisted leycord, or stout whipcord, wound on a thumb-winder or reel of hard wood. The method of using a clearing ring (we will say the improved, for it is very seldom that any other is now used):—To use the jointed clearing ring, open it, and having put it

around the rod including the line, incline the rod, and by means of the cord lower the clearing ring easily down the rod on to the line, passing it carefully along that until it reaches whatever may have entangled the hook. Weeds are among the most common obstructions: sometimes, however, the hook becomes stuck into piles, stumps, or may be jammed between stones, &c. &c. In all cases after having passed the ring down the line, when it reaches the hook, straighten the line moderately tight, which will direct the ring so as to fall immediately upon the hook, and this alone will often release it from whatever it has stuck into. If this should not be the case, endeavour to get the ring over and below the hook, then gently draw the ring cord backwards and forwards, keeping the line at right angles with the line of the ring, by which the power will be exerted upon the embarrassed hook and not on the line. If it be found that the hook cannot be disengaged by this method, still keep the line tight, and forcibly pull the cord of the clearing ring until the line gives way, which act, if dexterously done, will commonly take effect near the hook, so as to lose little more than the hook, and will not at all injure the remainder of the line.

3038. *The drag-hook* is another implement for clearing away obstructions in angling. As the clearing ring is more necessary to the bottom angler, so the drag is more frequently



DRAG-HOOKS.

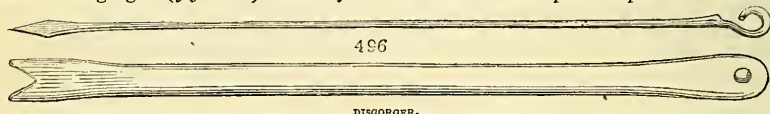
495

employed by the fly-fisher, and in weedy rivers it is pre-eminently useful. It consists of three stout iron hooks (*fig.* 495.) placed back to back. In using it some dexterity is required to throw the implement just over the resisting matters that hold fast the hook and line, which nine times in ten are weeds. If the drag be cast too much beyond where the hook is stuck, it only drags a quantity of weeds towards the obstruction, and sometimes loosens a large mass of them, which it floats down the river carrying the hook or fly with it, or at

least it thickens the water and disturbs the fish. On the other hand, if it be cast short, it makes much disturbance to no purpose. A little practice in throwing it will, however, enable the angler to succeed at one or at most two throws: to teach him to do which, we would recommend him to amuse himself occasionally in throwing it without other necessity than the practice. The *drag* is so very useful an implement to the fly-fisher of the South, that it bespeaks, as it were, disappointment and misfortune ever to stir out without one, from the weedy state of the southern rivers; and as the drag itself sometimes gets so fixed in stumps that it cannot be released, and its value will not tempt one to obtain it at the expense of a ducking, we always were ourselves provided with two, since

it might not be convenient to manufacture another on the day succeeding that on which one has been lost. Having ourselves suffered in this way, we offer this caution to others, and it may be found a useful one.

3039. *The disgorger* is likewise an instrument common to both bottom and fly-fishing. Whenever a greedy fish has well taken the bait, it is not without difficulty that the hook is released from the mouth. If it be attempted to be done by force, the hook commonly gives way, or the line snaps. It is unpleasant to cut open the mouth to introduce the fingers, but this must be done if there be no disgorger. Almost any thing will make this, a piece of split cane, a strip of hard wood, the handle of a horn or metal spoon, made somewhat forked at one end, may be applied to this purpose. Our own disgorger was, we conceive, an improvement on this, and we recommend it for trial to others. The common disgorger (*fig. 496.*) has only the forked end as an operative part to release the



DISGORGER.

hook by its pressure. Ours was made of steel, with one end presenting the usual fork, and the other forming a circular cutting blade. No one accustomed to bottom fishing but must have met with many instances where a voracious fish, as a perch, has actually gorged a hook; in which case, unless the filthy and disgusting process of cutting open the fish be resorted to, it is difficult, from the smallness of the mouth and the nature of the membranous part entangled, to disengage the hook with the usual disgorger. In such a case hold the line tight with one hand, as though the common disgorger were in use; then introduce the circular cutting part of the improved one beyond the fixed hook, and when that is brought forward and raised by the line being tightened on it, direct the cutting part under the hook, which will probably give way immediately.

3040. *The minnow-net* may in ordinary cases find a substitute in a full sized landing net with a small mesh, as we have recommended, which being held under water for a little time where minnows resort, will soon be covered with them. By raising the net at first very cautiously the minnows will rise with it, and when it has arrived near the surface a sudden pull will secure them. Minnows are not however always to be procured in this way, and in such cases the regular minnow-net must be used, which is usually a fine meshed silk one, of three or four feet in diameter, stretched on a circular or square frame of stout wire: this being attached by three or four cords, so as to keep the frame horizontal, to a pole of six or seven feet in length is used as before, but being larger, and capable of being carried deeper and farther out, it is much more effective. When minnows cannot be obtained by either of these methods, a very fine silk casting net will commonly supply them. We have however occasionally been foiled with this implement also, and as a last resource have been forced to angle for minnows, and have found that if the wind were not rough, or the weather cold, a sufficient number for any ordinary purpose might generally be procured with a fine hook and a small worm.

3041. *The minnow-kettle* is indispensable when live-bait, particularly minnows, are wanted lively and in plenty: larger fish may be kept in a drum-net. The usual minnow-kettle



MINNOW-KETTLE.

is either oval or square, and is commonly broader at the bottom than at the top (*fig. 497.*), which shape is not the best; for every perfect minnow-kettle should have a strainer fitted exactly to the inside of it, so as to slide up and down with ease, and yet not to jam any of the minnows between it and the kettle. The strainer should resemble that which is usual in the common cooking fish-kettle, and it should be let up or down by means of two ears like that, or by a small cord. When a bait is wanted do not, as many do, thrust your hand into the minnow-kettle to the injury and discomfiture of your baits, but put in a small bowl-net, and take out such as you want. By means of your strainer all the minnows can be brought at once to view, and such as best suit the purpose may be selected, instead of wetting the hands, heating the water, worrying the fish, rubbing off their scales, &c. &c. and perhaps tormenting one's self by catching all but the right. To avoid this some prudent anglers, who use the common live-bait kettle, take out the fish with a small gauze net having a handle, the whole not unlike a soup-ladle. It much improves the kettle that it be rimmed, and that the perforated lid be within this rim, which should be an inch and a half deep, to prevent the water from escaping or slopping untidily about when moved: even dirty work may be rendered doubly dirty by some hands. In hot weather sink the minnow-

kettle in the water fished in, to keep the fish cool and to renovate them. A cord should be appended to the handle, and a fastening to the lid; and when the minnow-kettle is not kept under water, the water within should be changed every hour at least (every half hour is better) if moderately filled with minnows.

3042. *The hoop-net* (*fig. 498.*) is an angling appendage intended to keep the fish taken alive, either that they may be moved from one place to another, or otherwise that the necessity of destroying them may be obviated until they are wanted, which destruction should always be deferred as long as possible where gastronomy is concerned, particularly if the fish have not been or are not to be crimped.

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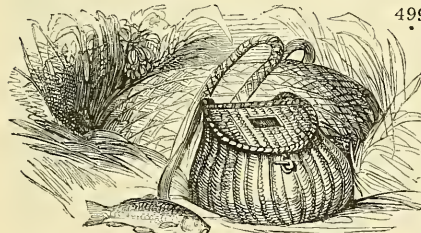
HOOP-NET.

The hoop-net may be of any dimensions, as from ten inches to a foot and a half. It is usually formed of three circular pieces of cane, one of which forms the upper and the other the lower ends, while the third sustains and keeps open the centre portion. A fourth and smaller circle forms the mouth of the net, which draws up and closes by means of its cord. This cord, of some yards' length, is attached to it, and by its means is first lowered in the water, and then secured either by fastening it to a bough or to a spike stuck into the ground. It is to be noticed in the use of the drum-net, that when a strong current is flowing it will be prudent either to put a stone within the net, or to have the lower part of it loaded with lead. The

reason of this caution is, that in the current it sometimes happens that the net will become closed by the buoyancy of the cane within the pieces approximating, and thus drown the fish; but that is avoided by such a weight as will keep the net extended in the water.

3043. *The fishing basket, pannier, or creel* of the bonnie Scot (*fig. 499.*), should be made of wicker-work, with two openings for a leathern strap to pass through, which strap should encircle one shoulder and be buckled, so that it may be laid down or taken up as occasion may suit. During the action of fishing, the basket may hang easy, and will thus encumber the arms less; but on the return home, if well laden, it is most conveniently carried when drawn up tight under the arm. There are, however, great varieties of fishing panniers made to suit the varied fishings. The side of the creel next the body should be somewhat indented, to correspond with the shape; and we also recommend that it be wider, particularly towards the bottom, than these baskets are usually made, and the thinner its bulk the more easily will the arm pass over it. Some baskets are made of sufficient width to carry a fish of four or five pounds at full length, as seen in the cut, but which few of the neat baskets bought at the tackle shops will do. It is better therefore to have one purposely

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FISHING BASKET.

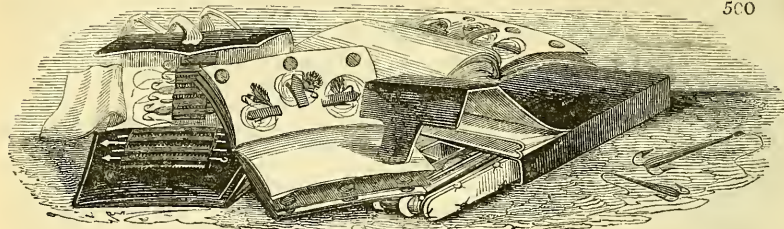
made. Much, however, will depend on the country fished in, the fish angled for, and other circumstances. An angler going without an assistant to a plentiful water at some distance from home, would naturally provide himself with a full sized basket; and if he ran a chance of catching very large fish, he would take care that it should be wide enough to lay them in handsomely and without doubling. To lessen the incumbrance of a basket, we on some occasions altogether dispensed with the use of a pannier, substituting in its

stead a fishpocket (in our jacket) of large dimensions, which was lined with a movable pocket of oilskin. It was however no improvement on the slung basket; for, independent of the weight, which, being removed farther from the centre of motion, became more burdensome, we found that when a tolerable quantity of fish had been taken, it was impossible to keep the pocket sweet and free from smell. We have, however, another mode of avoiding the carriage of fish, which we hope may not altogether be lost on some humane brothers of the craft: we occupied for some years a fishing station in Hertfordshire; and as we followed the sport with avidity, and fish were plentiful, particularly coarse fish, we frequently filled our basket twice and sometimes three times a day. To carry home fish thus often was toilsome; it was worse, it was disgusting; we therefore adopted a mode of relieving ourselves, which we would recommend to other anglers: we dropped these fish at the cottagers' houses in our road, taking them in *succession*, excepting that when they were thankfully received among a larger crew than ordinary of chubby-faced children, we were apt to call twice at such doors for *once* at those where we suspected our offering was not really made use of for food. By these means the angler will avoid the toil of carrying home what he will seldom consume. He will likewise bring the practice of the art into repute, and at the same time blunt the ill-will and envy of those around him.

SUBJECT. 8. *Angling Pocket-books.*

3044. *Of angling pocket-books* there are many varieties, made both by the tackle makers and by gentlemen who manufacture their own articles of this kind. Unless the taste be very

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ANGLING POCKET-BOOK.

capricious, or the wants of the angler be very peculiar, it is hardly possible that he will be unable to suit himself among the almost endless varieties of these books in the fishing-tackle shops; and as they are got up with great neatness and with a due regard to portability, we would recommend him to furnish himself from these sources. We would also advise, if his fishings be at all diversified or extended, that he have books for the several varieties of fishing, as one for *bottom angling*, a second for *trolling* and *minnow spinning*, a third for *fly-fishing*, and a fourth for *fly making*: but from what follows it will be found that, to the professed angler, we recommend some modifications of this plan. This division may be quite proper for the use of such as by local residence are well acquainted with the waters which they perhaps daily fish. To them it might be burdensome to carry laden trolling tackle, when probably a pike is not in existence in the vicinity of their anglings; and it would appear to be equally troublesome to set out with lines and floats when one of the true rapid trout rivers of the North was to be the scene of action for the day. Cases do occur, however, in which some articles beyond those immediately appropriate to these several kinds of angling become necessary, and which as we proceed we shall notice and provide for.

3045. *The bottom angling pocket-book* has one full square pocket to contain, first, the angler's reel of lines, the number of the divisions in which are optional, but if it present four for the reception of lines it will be amply sufficient, as with tip-capped fine floats each space will hold two lines, one on each side of the division. Between these is a kind of well, subdivided into minute compartments, which contain the plumb line, split shots, cap-tips, wax, India Rubber, &c. all of which are inclosed by a sliding cover fitted exactly to exclude the wet. In the pockets are contained spare lines, gut lengths, hooks in oilskin, waxed silk of different colours, &c. &c. The wrapping cover, which incloses all, is made to hold scissors, knife, pliers, disgorgers, &c. This may be considered as a simple bottom angling pocket-book, and when there is no chance of interruption by jack or eels, it is all that can be wanted. To meet which contingencies, if the angler wishes to avoid the trouble of his trolling book, he may, without much disturbance to the economy of the other, have inserted in a corner of it a gorge-hook and baiting needle, to make an attack on an intrusive jack, whose interruption he may suspect, if in the midst of his bottom fishing he finds the fish suddenly leave off biting.

3046. *The troller's pocket-book* presents two faces, one with divisions for gorge-hooks; hooks single, double, and treble, for live-bait fishing; spring and dead snap hooks; bead hooks, leadings, gimps, &c. &c. The other and lesser face is made to hold knife, scissors, pliers, with disgorgers and gudgeon and minnow baiting needles. Under this face will be found two pockets, one furnished with minnow spinning tackle of every description, separately packed in vellum folds. The other pocket will hold spare gimp, a strong foot length of gut or weed for finer trolling or minnow spinning. It may also be made to hold the artificial bait, called the devil, for trout trolling, with various other matters, according as it may be intended to unite the properties of a trolling and minnow spinning book, or as it may be intended solely for one of these uses.

3047. *The fly-fisher's pocket-books* (for two are necessary to form a perfect equipment) are to hold, one the flies, and the other the materials for making them. In no case is it prudent to mix these matters. The articles of which the flies are made will bear any degree of pressure: the flies themselves should not be pressed at all.

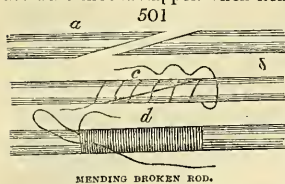
3048. *The fly-book* is like any other book, with a certain number of leaves — we will suppose eight, not of paper, but vellum. Four alternate leaves are fitted up with cork at the corners and centre of the margin, so as to prevent pressure to the flies, which are looped up by their gut lengths, and placed underneath the straps, of which there are three to each leaf: both sides of the corked leaves may hold flies. The book has a case which has two or more pockets, in one of which one or more foot lengths of gut should be kept, with waxed silk, and any other requisite matters.

3049. *The fly-dressing book*, to contain the materials, is fitted up with four large pockets of vellum in the covers (fig. 500.). It is also furnished with leaves of double vellum presenting appropriate openings, in each side of which vellum cases (differently sized and variously shaped, as long, square, &c.) slip in securely. In the larger and longer of these cases, wings of various kinds may be kept, and the smaller within the others; picked feathers, hackles, furs, and dubbings, all marked, and thus kept distinct. Of the two large remaining pockets, one may be appropriated to scissors, disgorgers, knife, waxed silks, &c. &c. In the other a spare line and spare gut; one or two foot lengths also, one of which may be fitted up for salmon, as in trout fishing a salmon will unexpectedly make his appearance, and it is then prudent to be prepared for him. On such an occasion the advantage of having the material at hand, and of being capable to use it, will be obvious; for, unless it be a regular salmon river, it is ten to one if the trout angler will have a salmon fly with him, but with his dressing matters before him, he can sit down, and in a few minutes be able to show a tempting fly, and challenge his foe to mortal strife.

SECT. III. *General Directions relative to the Repair and Preservation of Fishing-tackle.*

3050. *The various implements that have been described occasionally want repair; and as such want may occur when no professional assistance is at hand, it is an additional argument in favour of that mechanical tact at which we have before hinted, as being convenient and necessary for the occasions of the angler. One of the most serious accidents which can happen with regard to the tackle is the breaking of the rod.*

3051. *To repair a broken fishing rod (fig. 501.).* If it be broken actually through, and the accident should happen when near home or within the reach of a carpenter's assistance, a true



splicing surface should be made, by an oblique fine sawing directly through the two portions (*a b*), when one being placed on the other, will necessarily form a perfect application of surfaces, a true joint, and a lasting repair of the rod (*fig. 501.*). If the fracture be itself oblique, the surfaces should be planed as true as possible, by fixing both pieces firmly parallel, and then drawing them over the plane together. The wrappings being ready, let the surfaces be well glued together as at *c, d*, and if possible with the water-

proof glue. When these conveniences are not at hand, slope the broken ends with a knife, so as to fit them as perfectly as can be done, and in the true line of the rod, over which rub some shoemaker's wax. This being done, with fine well waxed twine, or strong thread, or silk (cobler's waxed ends are excellent), begin the binding of the parts directly below the utmost limit of the fracture, wrapping at first a few turns only of thin twine, as at *c, d*. Bring the strands together underneath the hands, each turn regularly, avoiding to cross or put one over the other. Commence anew to bind the pieces very firmly together, which being done, continue the binding a little above the broken part, omitting to tighten about three or four of the last turns for the purpose of fastening off with the hidden knot. Tied thus it is said to be done with the hidden or inverted knot, which, as it is important to the angler, we repeat the method once more:—The three or four last wrappings, instead of being drawn close round the rod, should be left loose, and should include in the laps the forefinger of the left hand (see *fig. 488.* p. 966.). Take care to preserve the bows or wrappings distinct, pass the end of the silk or twine between the finger and the rod, and then carefully remove the finger. It is now that the principal dexterity is to be shown in the use of the right hand just relieved, which (while the left grasps the rod near to the whipping) should be employed in carefully tightening the first of these loose turns, which will draw close the last of the whipped turns made before the finger was used. Do the same by the second loose turn, which will tighten the first of those turns which included the finger; repeat this on the third, placing the threads exactly close to each other and as tight as possible. It now only remains to draw up closely the whole of the spare end, which thus comes out from under the three or four tightened layers of the whipping, and to cut it close off; by which operation all will be made to be smooth and firm, without any appearance of knot. The advantage of this hidden, inverted, or invisible tie is, that it is at once neat and secure, and that it spares the rising, the wear, and the consequent insecurity of the common knot.

3052. *When the larger joints of a rod, particularly the butt-piece, are broken, or indeed whenever a whipping is to take place on a glued joint not yet dry, it is prudent to make a previous binding with lappings of some fine but very strong matter, as hard twisted silk, or apothecary's twine. These lappings may be from half to a quarter of an inch apart, they should be carried obliquely from one fractured extremity to the other, and returning again, they should cross or chequer the first lapping. The whole whipping may be afterwards rubbed down with a piece of hard smooth wood, to make a plain surface for the finishing whipping already explained. For the smaller joints this had better be avoided as less neat.*

3053. *When the top joint of the rod is broken, it will be found a good plan to strengthen the fractured parts by applying round them a quill, either passed down over the lap, or if this be not practicable split the quill, and when softened in warm water insert it around the fracture, first applying over it the waterproof glue, or otherwise some stiff wax. In this case it is hardly necessary to caution the operator against placing the opening or slit part of the quill to either the back or front of the rod in the course of its flexions: it should, on the contrary, be applied to one side. When the quill is applied, whip it round very firmly with the finest silk, and having carried it as far as is necessary, finish with the invisible knot, making this difference only, that to keep up the turns, instead of the left hand forefinger insert a disgorging, quill, tobacco-pipe, or other such matter under them. Or, for greater ease, the end may be passed under the bows or laps by means of a bodkin threaded as in sewing, after which it may be drawn to a proper degree of tightness. It will add greatly to the durability of the whipping, as well as its neatness, to rub it down afterwards with a slight pressure by means of any thing in itself smooth, as the disgorging. This will prevent any parts of the material from rising above the rest, and thus exposing itself to friction; and this pressure acting on the wax of the thread, or silk, will also force it into the interstices, and fill up the inequalities into a uniform surface. In the most common accidental whippings of twine, or packthread, it will perhaps surprise those*

unaccustomed to it, to see the effect produced by simply rubbing a whipped joint over afterwards with a piece of bees' wax, smoothing it off with the hand, or a piece of plain wood, &c.

3054. *As a finish to the systematic whipping* it will be proper to add a coat of hard varnish, which sets immediately, and makes the whole continuous, solid, and smooth. It will also, when the fracture has been glued in the common way, tend to prevent moisture from acting on it.

3055. *The waxing of silk, thread, gut, or other filamentary angling material*, is rather an important matter; and to do it well may require some instruction: it is not, for instance, by any means so easy as might be supposed, to lay an uniform surface of wax on a considerable length of very fine silk. To do this, it is essentially necessary that the wax be first in a fit state for application, that is, that it be neither brittle nor soft.

SUBJECT. 1. *Hints on the Preservation of Fishing-tackle.*

3056. *The preservation of fishing-tackle is momentous.* Good articles are expensive to purchase, and without care are liable to injury. As regards the rod, we have already given some directions; we will however repeat, that on the return from fishing it is imprudent to place it in any situation where it may be liable to accident. It is equally so to let the line remain loose, particularly with a bait left on the hook. We remember to have seen a rod thus left at a fishing inn on the Thames, where, on the return to dinner, it had been propped up at the front of the house, in which situation it had not remained long before a duck, attracted by the minnow carelessly left on the hook, swallowed it, hook and all. His struggles to march away with his prize, had pulled down the rod, broken the top, and run out all the reel line; which was covered in dust and dirt, and but little improved by the adventure. In some inns there is a proper apparatus, either within or without doors, to keep the rods in security, where there is room to place them upright, a groove or opening may be made to receive about two feet of the top of the rod, and something to secure the bottom also. The best appointed accommodation of this kind we remember to have met with, was at the Rutland Arms, at Bakewell in Derbyshire, where, in a lofty hall, a stand is placed to receive a large number of rods upright, in appropriate niches, perfectly safe from danger or molestation. We, as regards ourselves, are always averse to setting a rod upright at any time, unless there be some specific apparatus for its reception. It is very hard if a straight wall is not to be found somewhere: against such a wall, by means of a few hooks, the rod with the line fastened round it may lie horizontally. The hook of the line should never on any account be left with any thing on it: the juices of the bait become acrid in a few hours, and have an injurious effect on the point: besides which, the bait often dries so hard on the hook, as to make it difficult to detach it. Always therefore remove the bait from the hook; and having freed the point of it from moisture, draw it through one of the rod rings and hang it to another, which effectually frees it from danger.

3057. *On the return from fishing*, the remainder of the tackle should be separately dried. All waters have a tendency to injure angling articles, but some do it in a very extraordinary degree. We need hardly inform the observant fisher that, near the coast, a mist from the sea, or even a breeze from that quarter, will waft saline particles which will require his utmost vigilance to guard against. The sportsman must have witnessed the oxidising effect of moisture on his gun, where a thin coat of rust will show itself on a moist day within an hour or two. On the return, therefore, let every thing be put before the fire; and afterwards carefully wipe with an oiled rag, all iron or steel materials. It sometimes happens to rods, particularly to those without brass ferrules, that when they have been exposed to wet on the return from fishing, the joints are found to be so swollen as not to be readily separated. In such case by no means attempt to force them violently apart by twisting, and more particularly avoid so doing if the joints are of cane. If there be time and room, put such a rod within the air of a fire; but when the separation must be made immediately for packing, &c. wrap round the joints a fold of writing paper, and hold each over a lighted candle for a few minutes. The paper will prevent the flame from discolouring the rod, and likewise preserve the varnish from injury.

3058. *The general tackle will require equal care with the rods.* Damp will rot the lines and corrode the hooks, and every article in which steel enters, as the swivels of the trolling tackle, the works of the multiplying winches, and various other parts of works. Lines should be kept dry but not greased; on the contrary, every thing in which silk, hair, or gut enters, should be kept as free from oil as from moisture. More effectually to prevent rust, it will be prudent to remove all and every article in which iron or steel enters, from the leathern pocket book or any leathern covering, as this substance attracts moisture whenever the atmosphere is in a state to impart it. Insects also, too minute for detection, are apt to commit havoc among all the soft articles of fishing apparatus, but particularly so with every thing in which feathers, wool, and fur enter.

3059. *The best preventive against these slow but certain destroyers*, is to tie every thing of the kind up in linen bags. Neither moths, nor those more invisible intruders, the *Der-mestæ* and *Termites*, will make their way through linen envelopments. This arises, as we suppose, from something inimical to them in the hemp, for no thickness of woollen or of cotton fabric will form a security from their attack.

CHAP. V.

PRELIMINARY OBSERVATIONS ON THE PRACTICE OF ANGLING.

3060. *The simplicity usually attributed to angling* is altogether imaginary; to practise the art successfully in any of its branches requires some observation and address. Great dexterity is requisite also; and all the arts of the tactician must be employed in the ensnaring of some of the finny tribes, whose quickness of vision is such that they are not to be deceived, save by mimic representations formed with great skill. The urchin hollows the alder branch, or strips the bark of the ash, and forms from thence a whistle; but the shrill noise extracted from it does not serve to convince us that the practice of music is a simple art, and that its theory is not complex. The elegant art of fly-fishing involves so many requisites, that no one denies to its successful practitioners the praise of accomplishment and skill. The intricacies and niceties of float and ground anglings are also numerous, and demand lengthened practice to attain; in their proficiency we hesitate not to say that the London anglers excel the whole world. This praise is given as the result of no very limited experience. We have wetted our bottom and our fly lines in almost every water between John O'Groats and the Channel; we have trolled the minnow in Wales, and have gaffed our salmon in Ireland, but we have rarely met with any anglers like them; neither did we ever yet meet with any impartial judge who did not yield to them the palm for excellence in bottom or float angling more especially. London also produces some of the best fishing-tackle makers in the kingdom. By them the angler may be fully equipped with fishing implements of all kinds, and with baits of every description, as well living as dead. If he have money, all his wants can be immediately supplied. Conveyances likewise are to be readily met with at all hours, to carry him to waters most amply stored, and immediately connected with houses of entertainment, which offer every accommodation to render the practice of the art convenient, and his stay agreeable. The more active and the more economic may traverse the banks of the Lea, while the wealthy, luxurious, and sedentary may enjoy the sport on the Thames, seated in a punt with an attendant fisherman versed in the mysteries of the art, who, if he has to wait on a true voluptuary, will bait his hook, adjust his float, and prevent the smallest exertion to the angler, save that of playing his fish. Nor are the opportunities of acquiring the initiatory practice of the art less inviting or less numerous. The New River offers scope for the piscatorial efforts of the schoolboy, who, as yet a tyro, sees in the tiny but wary fry his match; and soon perceives that to compete with his fellows he must adjust his bait with precision, watch every nibble, and the moment it is converted into the certainty of a bite must strike warily but truly. Thus initiated, he extends his wanderings to the Lea, where the fish, well fed by nature and crammed by art, are with difficulty enticed to take any bait but the choicest, or to be ensnared by any hook but the one most artfully concealed. Hence it is that London can furnish such adepts in our favourite sport.

SECT. I. *Angling modified by the Month.*

3061. *There are times and seasons for angling*, as well as for all other sports, but in this respect the angler has an advantage over him who courses, hunts, or shoots, because his sport is not limited to time by law, except in particular places and for particular fish, as in the Thames, which is shut from the bottom angler in the spring months up to June; and in some proprietary rivers, where fishing for salmon is shut out altogether. The ardent angler may therefore occupy himself every month in the year in his favourite pursuit with this caution, that in some few of them he has little chance of catching any thing by fly-fishing, but must depend on his trolling rod. The period from April to November is by experience found to be the best adapted to the taking of fish by rod and line, and indeed such is now, by common consent, considered as the "regular angling season." It yields the best sport, and that it is the least likely to endanger the health is true; but it does not therefore follow that every one should confine his anglings within these limits, nor is it by any means to be concluded, that the winter months are totally barren of sport; in the Thames they are by many reputed the best.

3062. *January* offers usually but little temptation to the angler to leave his snipe or wildfowl shooting, hunting, coursing, or his skating. It is however possible in a bright day, when the season has not been very severe, that a trout or a grayling, but particularly the latter, may be on the look out for gnats and other minute flies, or tempted with the gentle at the bottom. Chub also may occasionally be taken with the winter bait of ox or sheep's brains. A greedy jack may perchance be ensnared, and a roving roach may be tempted with paste; but the other finny tribes have retired to deep holes, clustered among the few remaining weeds, or lie sheltered by overhanging banks, or buried in the mud below. Here they remain in a partial state of torpidity, or at least of inactivity, and probably do not forcibly feel the calls of hunger. There must also be taken into the account the locality to be fished. In the southern parts of our island fish

commonly move from their semi-hibernation two or three weeks before they move in the north. In the Trent fine chub and pike are taken.

3063. In February the chance of success is much increased in angling, particularly in some warm localities. We have ourselves taken this month, chub, roach, carp, and perch; jack have also afforded sport, but they are more commonly taken at snap at this time, than by any other method. We once took likewise a very large eel about the middle of this month, while roving with a worm for a perch, having found this kind of fishing for large perch singularly successful at this time of the year.

3064. *Perch* now and then, as we have observed, may be enticed in this month, and occasionally roach also. In some sheltered situations jack will take a live bait with line and float in broad waters, but they are too apt to be capricious, and therefore are most likely, as already observed, to be taken by the live bait with the spring snap. Flounders are fished for in tide rivers during this month with success, and eels occasionally run. The worm-taking fish of rivers will now begin to seize the well-scoured varieties, particularly the lively reds. Pond fish will not stir so early; we however have taken chub by a pair of wings on an otherwise naked hook, substituting a small grub, or two gentles, for a body. Our method was to allow this to roll off a bank, under which we suspected chub to lie, when we often found it immediately seized; in fact, it usually succeeded on moderately open days brightened with partial gleams of sunshine.

3065. The month of March brings with it new and brighter prospects, and is the acknowledged time to commence fishing operations in earnest, provided the angler be not too sanguine in his expectations. Jack are usually hilling now, and many of the finny inhabitants are beginning to follow their example if the season be forward. All such, therefore, are in an economic point of view better let alone than disturbed during the process, however good their condition may be. Occasionally, but rarely, a trout will take the worm trailed at the bottom of a scour in March: but the early dark dun and brown flies, assisted by the cow-dung and other musce, will more frequently tempt him in a brisk windy day when not cold, and more certainly when there has been no frost in the night. The grayling also, particularly the smaller ones, will begin to rise to the same baits, but of them there is less chance at this season than of the trout: this refers, however, to some rivers only. In the earlier salmon rivers the salmon are on the run, and will afford admirable sport this month with a fly. In the Thames the angler is allowed to fish for the trout in the same manner at this time; and also by spinning, the best mode of angling for it at this season. Carp and tench of rivers, chub, roach, flounders, and eels, are this month fair game for the angler when he can meet them.

3066. In the month of April the angler usually commences his operations in earnest, but even yet we would say to the troller and float fisher, Hold hard! while we throw in a word in favour of some of the scaly multitude. If they have spawned they are weak, and afford but little sport, and they are likewise totally unfit for the table: if they have not spawned, or are on the eve of spawning, for every fish now taken thousands are lost to the water; and unless the season has been very forward, there are but few coarse fish, except pike and jack, that have completed the process in the first week of this month. It is certain also that in some waters as many pike *hill* in this month as in March, and except in very warm ponds, perch have still the milt and roe within them, and there, gentle angler, let them remain: it will be sportsman-like and merciful, and in the succeeding months fall to it with what appetite you may. The prey will then be worth taking, and prove an acceptable treat to your friends. Fly-fisher, the trout are rising!

3067. It would be well that the fence months, during which heavy penalties protect the spawning fish in the Thames, were extended to other waters. We would not, however, include the last fortnight in May, as by that time, when the season is not unusually backward, we suspect most fish common to the angler have spawned. The gudgeon of the Thames now seek less active streams; and run up the mouths of those tributary to it, where they locate themselves to spawn. During this and the next month the Lea fishers seek them, and consider them as a delicious treat. But they are not thus early in all rivers; on the contrary, in many they will not *take* well until June. In April the trout bids adieu to his hiding-places, which he had before only quitted occasionally, and he may be taken either at top or bottom of the water. The caddis, or larvæ of the *Phryganea*, or spring-flies, are now in full operation, and may be successfully used in some rivers, in float angling for both trout and grayling; while the water-cricket, or creeper, which is the pupa or chrysalis of the stone-fly (*Phryganea grandis*), will now usher in the dapping or dipping season. Carp about this period are observed to eat fine grass and aquatic plants, and both carp and tench will take the red worm. But in this month a great number of perch, barbel, dace, chub, minnows, rudd, and pope or ruff, spawn: where that is not the case, by angling for them in the swift shallows and gravel patches with worm, and in some rivers with caddis also, they may be obtained, as they will bite freely in mild weather, particularly when a hoar frost has not preceded the day. In the latter part of this month eels may be taken in plenty. Flounders and smelts are likewise free biters in docks, tide-ways, &c. &c. In some rivers the salmon and sea trout now afford the angler his banquet of fishing delight; the smolts, or year-old fry, on their way downwards to the sea, are excellent risers to any small fly; and in the grayling rivers that admired fish will occasionally take the worm, though this cannot be considered as its season, except for spawning.

3068. May is a spawning month with many fish, particularly its first week; and it is the more likely to be so when it succeeds to a backward spring, which will retard the spawning season a fortnight. The state of the water will do the same: when winter floods have been long detained by late additions, and the water prevented from clearing by a wet spring, many fish delay their spawning, instinctively dreading that the clearing away of the flood may derange the gravel which is to protect their ova. Roach, some carp and

tench, bream, gudgeons, and bullheads, spawn in abundance the early part of this month, all of which, with the exception of gudgeons, will continue to take the usual baits offered with moderate eagerness. Gudgeons are not fairly on the feed in many rivers until June: the insects which they seek by earthing up the gravel are not forward; and they derive a scanty subsistence only from this source until June and July, by obtaining an occasional supply of early larvæ. In all cases the fish that have spawned will for a time seek retirement in pools, while those which have not, may be found in gravelly shallows and sandy fords, which it is supposed they seek for the purpose of depositing their spawn, as well as to assist by friction the action of shedding the milt and roe.

3069. *In June* the London angler has his favourite resort the Thames opened to him, but to the bottom angler the early parts of the month often prove a blank. Whipping for dace is however successful in the sharps and eddies, and occasionally a fine trout is raised at the same time. On the great trout rivers the May-fly is probably at its height, and happy is he who can get a good station. Grayling also, beginning to stir themselves, are sometimes alternately taken with the trout. The punter looks forward to the end of the month to open his campaign against the gudgeon and barbel, while the more active of angling amateurs skirt the banks, and dape with living insects for chub, roach, dace, &c. Perch, eels, and flounders yield sure sport; in fact, all the white fish will begin again to take freely towards the end of this month. The Thames trout is now active.

3070. *In July* the angler, if he would command success, must rise early, and remain out late. The white fish have now fully regained their strength and plumpness, except those which spawned late. Those carp and tench which did not spawn the last month, may be expected to have done it the first week of this. Jack trolling is yet uncertain, and cannot be pursued to any advantage without a favourable breeze and a hidden sun. Gudgeons are now on the feed, and the trout will chase the minnow, having somewhat glutted themselves with the fly. In this month the half unfair practice of night-fishing with a jobworm on the top of the water for large trout, is but too common and too destructive. Minnows in some streams are again in spawn. The grayling, who has begun to rise to all the trout and dace-flies with avidity, will yet take the gentle at midwater, and sometimes in preference, particularly if the water be at all foul. It is now also that, by the practice of sinking and drawing, the largest grayling may be taken in some rivers, as in those of Hampshire. Roach will also even in midday, if the sun be not in full vigour, take a gentle on a hook previously dressed with a hackle half way down it, or the same with a pair of light coloured wings. Chub may be caught in this month with the grasshopper all day, but early and late anglings are those principally to be depended upon for the taking of trout. If however a very warm gloomy day, with occasional moisture, not the consequence of electric action in the air, should occur, the opportunity should be embraced, as bottom fishing with a lively worm may then fill the pannier. In regard to fly-fishing it will be found in many rivers, that the trout are now less inclined to rise than they were in the preceding months; they will however, if a favourable breeze lend it aid, take the bright coloured duns, as the red spinners, &c. Towards the close of the day, and particularly after a very hot clear one, they may be taken or enticed with the fly called the Coachman (No. 42. of our list), and still later in the evening the moths will prove effective.

3071. *The northern sportsmen* are now on the alert to complete their summer fishing, and prepare for grousing. The grilse, which are fast returning, will now take the fly. The salmon and sea trout also afford the angling visitors to the Lochs and Highlands of Scotland a surfeit of sport, and they return surprised at the grand scale on which fishing is practised on the large waters of the North. On the lakes of Northumberland and Cumberland small perch may be taken in myriads by the tourist, but it is not common to meet with a large one. The burn or beck trout will also afford much sport to the visiter, who will hardly fail to be amused with the blackness of his hue. In the expansive waters of the North the troller from the South must adapt new tackle to his fishings. His multiplying winch must be changed for a plain one, unless the principle of the new multiplier be better than that of the old. Without this caution he may lose his line, or break his rod: his fish he must part with, if it happens to be a large one. In his wanderings the gillaroo trout may probably engage his attention, as well as the char and the gwyniad, which, as being scarce, must interest him.

3072. *In August*, bottom fishing may be pursued with avidity, the summer leisure of the Londoners invites them to the haunts of the fish, and the Thames is seen studded with punts, some stationed in the barble deeps, while others are moored in the gudgeon scowers. The banks present, ever and anon, a daper for chub, or a worm-angler for perch, or a general fisher like the sharp lad, who to the inquiry what he fished for replied, "For what he could catch." The professed angler will at this time of the year attend the waters early and late only, unless a lowering gloomy day favours his wishes. The whipper for dace will find them getting shy, and the roach will look twice at the well sunk half-fly with a maggot before he will take it once. The trout season is fast waning: but that for

the grayling is hardly arrived at its zenith, either at top with the fly, at midwater with the gentle, or at the bottom by sinking and drawing: they will however now take the bait, and yield the angler sport in rivers where they abound. Sea angling now also engages the attention of many of the migratory class, where in a boat the graceful fair also may be seen, ensnaring at once the fishers and the fished. On the salmon rivers, those whose inclination does not lead them to the arduous pursuit of grouse shooting, may still attempt the capture of this noble fish with either fly, minnow, or worm, in the rapids; while, on the lochs, he may be trolled for with the tail of a par during a rowing or sailing expedition. In the Hampshire and the Derbyshire rivers which furnish grayling, the angler wields his fly rod with signal success. Sometimes, however, they may be found willing to rise, yet slow to take. If this prove to be the case, try bottom fishing with either gentle or grubwasp, which, in the pools to which they resort at this time, will prove the more certain means of taking them. The precincts of the river Lea now offer the beauties of its enamelled meads and varied prospects once more to tempt to its banks the citizens of London, to wet their lines and recreate their persons. Here may be seen the idler, with whom fishing is an excuse to leave home and business; and although he may not be able to punish the fish, he can punish the meal spread out for him, and wash away care in a pot of the landlord's best, or puff defiance to reflection and bad sport from a yard of clay, or a four inch cigar. We will hope however that this is not "a fair sample:" such are only occasional guests. The majority of those who frequent the fishing-houses on the Lea are, as we well know, excellent anglers and wedded to the sport. Hither they resort during this month in pursuit of barbel, jack, roach, dace, gudgeons, eels, &c. &c.; and a few days spent at one of these clean neat *river houses of call for anglers*, will introduce the novice in Lea fishing to some of the first bottom anglers and trollers in the kingdom: and he must be indeed a cynic who could not find recreation here for that time.

3073. *In September* the weeds begin to rot: the general fisher having tired out the ant-flies in the last month, and even the fetid brown at the beginning of this, now lays by his fly tackle altogether, and betakes himself with his bottom rod to the pools, whither chub, roach, dace, carp, and tench, now begin to retire. The gentle at this time almost supercedes the worm, and the perch will best take a live bait: pastes begin to be relished by roach, and with this bait roach fishing is carried on through the later months of the year. The grayling are at this season in their finest condition, and will continue to take freely the late duns and willow-flies. The very large ones among them may be tried for successfully, by the methods hinted at for the last month.

3074. *October.* The sun of the fly-fisher's joys is now fast setting, and unless he be near a grayling river, or be a troller also, he is little more than cheered by the perspective of a new era and another dawn. The weeds are fast decomposing, and as the fish shun the rotting mass, the pools and hollows to which they retire offer the only hope of success. Here, with the well-mixed paste, the roach and dace angler sits secluded, and the troller plies his skill, rejoicing in the glories of autumn.

3075. *In November*, too, this healthy branch of our art is triumphant; and grayling, particularly the smaller ones, will still rise to the artificial duns. Pike may any day be taken by trolling. We took, on the 21st November, 1824, three jack in about two hours' trolling, on a blustering day, at Boxmoor, Herts. Chub-fishing with brains may now be pursued, and roach fishing is still good in the deep pools, with winter gentles or well-made pastes, and may be continued both this month and the next if the weather continue open. But prefer *spinning for jack*.

3076. *December* closes the fishing year with somewhat of a similar bill of fare to that of November, but considerably more uncertain. Some enthusiasts in the sport, however, may yet be found to try their luck, and some hardy sons of Nature might venture for the chance of a gleam of sunshine and a gleam of sport. We wish them success; but we must decline accompanying them. Trout are at this time out of the question: but the hardy live-bait fisher still bags his pike in first-rate condition.

SECT. II. *On the proper Times of the Day, and the best Situations for Fishing.*

3077. *The best time of day to fish* during the summer months is from sunrise to two or three hours after, and from two hours before sunset until half an hour or an hour after that time. Of night fishing we say little, as the less it is practised the better it is both for the credit and health of the angler. As the season advances towards the colder months, the likeliest fishing hours are those near the middle of the day. In direct winter fishing every hour is alike, provided the weather be open and mild; for if it be frosty, no hour is good. In the spring as well as the autumn months, when the temperature of the atmosphere is raw and cold, even although there be no apparent effect of frost, the fish will not bite until the sun has dissipated the cold air.

3078. *Dark nights it is thought affect fish*; that is, fish are supposed to take baits less eagerly after a gloomy dark night than after a bright moonlight one; because, during the obscurity, they roam in search of prey, and in the morning being gluttoned they are less

eager for food. We by no means however think it proved, that fish feed less during bright nights; for we are warranted in supposing that they seek some repose as well as quadrupeds, though they are, as we know, taken in bright nights by the evening and night ephemeræ.

3079. *The favourable effects* of dark lowering days are, however, not so questionable as some think; on the contrary, fish of all kinds are then disposed to bite, particularly in ponds and other still waters. Heavy rain is unfavourable to sport, but a soft drizzling rain, on the contrary, assists some varieties of angling; and soft passing showers, provided they are not accompanied by, or are not consequent on, an electrical state of the atmosphere, increase instead of diminishing the success. Thunder, we hardly need hint, is very unfavourable to the angler. Fish never take well when the mercury in the weather-glass is falling.

3080. *A breezy warm wind* is very favourable to the taking of some fish, particularly the more predaceous varieties, unless such a wind should occur in the middle of the summer, when a moderately cool wind is equally if not more favourable to pike, perch, &c.: in a bright sunny day, a cool breeze will make all fish bite. They are on the alert at such times to profit by the ripple made on the water, which somewhat disguises them; and the fisherman ought also to be on the alert, as then his baits are disguised by the same means. The south and south-west winds are decidedly the best for angling. The east is usually considered as the most unfavourable, and the due north wind next to it: but in our opinion a wind which blows between these two points, is more detrimental to sport than when it is either easterly or northerly direct.

3081. *An angling expedition* to waters unknown to the fisher should be undertaken with materials to meet every variety of fish, and every method of taking them. Arrived at a spot, a little inquiry judiciously set about will greatly further the end. If a known angler can be met with, it is seldom that information is withheld, particularly when he learns that the visit is but a temporary one. If he be a pot angler, and be *costive* as the lawyers express it, open his mouth by a cigar,—perhaps he may not disdain a *fee*; his betters have swallowed such a bait. We have travelled through most parts of the united kingdom, and always with our fishing-tackle; many parts we have visited several times over, and we have felt the advantage of pursuing the rules we are now laying down for others.

SUBJECT. 1. *Particular Observations connected with the Practice of Angling.*

3082. *Concealment ought to be the watchword of every angler.* The want of caution in this particular defeats the fishing enterprises of thousands; even many expert anglers lose half their fish for want of being more wary. How is the approach to the water usually made, but by one or more going at once to the margin, looking over its sides, and conversing aloud on the best spots for swimming the float? Can it be otherwise than that all fish within sight or hearing will abscond? and the larger the fish the more wary will they be. If an opportunity occurs, it is prudent to visit the intended angling ground on the evening before fishing commences. At such an inspection it may not be amiss to make the most of time to lay in a few night lines for eels.

3083. *Having chosen the spot or swim*, as it is termed in rivers, which should be of sufficient depth, throw in some ground bait all round to congregate the fishes; but in the very spot it is intended to take the principal stand, there throw a plentiful supply of ground bait, somewhat of the nature of the baits you intend to use. Clay balls, with worms indented in them, if worm fishing is to be principally tried, are a very proper ground bait. Gentles may form the basis of the ground bait in a similar manner; but for this, use the worst of your gentles, or an inferior sort. If paste is to be used, the ground bait may be clay and bran: for particulars we however refer to the article, *Ground Baits*, p. 1030. If from necessity the ground bait be deferred until just before the angling commences, it must not be so plentifully employed as in the other instance—the fish may else become glutted. In that excellent work, *Salter's Angler's Guide*, our views on the subject are completely exhibited when he says, “After you have made choice of a place to fish, first plumb the depth truly, and with as little disturbance to the water as may be; let your line, with the plummet to it, remain in the water while you make and cast in the ground bait, by which time the line will be softened and stretched, consequently less likely to break. If the water be still, throw in small pieces of ground bait; if a strong current, large pieces: keep as far from the water as you can, and go quietly and slyly to work, for fish have so many enemies that they are suspicious of every thing they see, feel, or hear; even the shaking the bank of a river (under which fish frequently lie) will alarm barbel, chub, &c. and spoil the angler's sport: this occurs frequently by strangers walking to and fro to see or inquire what sport, &c.; and also, when two or three anglers are fishing near each other: therefore avoid agitating the water by trampling on the bank unnecessarily; drop your baited hook in the water gently, and you will kill more fish than three anglers who act differently.”

3084. *Avoid every thing that may attract the attention of the fish*: stand as far from the water's edge as you can, and never let your shadow fall on the water. If possible, take the advantage of a bush, tree, &c. completely to conceal the person: when an angler fishes near home, an artificial screen of rushes, twigs, &c. may be employed for that purpose. In daping or dibbing with the natural fly, the greatest caution is necessary to keep completely out of view of the fish; and not only the shadow of the person, but that of the rod also, should be kept from falling on the water.

3085. Among the cautionary remarks on angling we hint, that the colour of the water should be imitated in the colour of the line, particularly that part of it which enters the water as the foot-link. When the water is very fine and bright, Indian weed is better adapted to it than gut, but it must be well soaked before it can be prudently depended on. In an ochreous soil, when a flood has tinged the water, let the gut be also stained of the same colour. Pure clay gives a kind of light eheshnut, which must be likewise imitated: it is therefore well to have these varieties in the fishing pocket-book. We once more advise the young angler never to fish without a reel. In our early anglings we so frequently felt the inconvenience of doing so, that we would not whip for bleak even without being armed with a reel; and this, in general cases, should be used not on the stop, but wholly unchecked.

3086. It was our practice to weigh all our fish, and to note their several weights, which custom we recommend to our brother anglers, if they are not at present in the habit of so doing. It will beget a satisfactory readiness of judging by the eye only the weight of every fish. We have witnessed many instances of extreme accuracy in this respect in individuals, which gave rise to many diversities of conjecture, and laid the foundation of pleasant small bets with such as were equally confident but less skilful. A small spring tube weighing-machine (fig. 502.) is therefore a useful appendage to the heavy baggage of the angler. To judge of the eye-weight of a fish it is necessary to remember that it is not by the length alone that this judgment is to be formed; this must also be difficult from a due regard to the relative proportions between the length and the circumference. Thus *Halicus* in *Salmonia*, having ascertained by measurement that a well fed fish he had taken was but a little less than twenty-four inches, concluded, by the usual scale of relative proportions in trout, that his solid measure, *i.e.* his weight, was about five pounds ten ounces. His companion observes on this, that the principle on which he formed this calculation must have been the mathematical one, *i.e.* that similar solids are to each other in the triplicate ratio of one of their dimensions, to which *Halicus* assents, and the trout proves to be five pounds ten ounces and a half. *Halicus* further informs us, that his standard solid with regard to a well grown and well fed trout is that of seventeen inches by nine, which will then weigh two pounds. Custom will render it equally easy to form a tolerably accurate judgment of the weight of other fish by the eye, and this acquirement to those who make a point of only taking such as are above a determinate weight (a regulation by the bye sometimes forced on us), often proves convenient. There is also a greater concentration of muscular matter in some fishes than in others, of which the salmon is an instance, while the whiting weighs light in comparison to its bulk. All flat fish are weighty. Where fleshy flakes are large, as in the cod, air intervenes, and thus lessens the gravity of the fish. The carp is proportionally heavier than the pike, and the weight of the eel, particularly the conger, is greater than all. Experimental trials will afford some curious and unexpected results, as we have found.



WEIGHING MACHINE.

SECT. III. Hortatory personal Remarks connected with Angling.

3087. The dress of the angler has been a matter of some dispute with writers on the art. Some think he should be clothed like the huntsman of old in green, omitting, we presume, the border of gold to the vestments; otherwise the fish, mistaking it for gimp, might prudently avoid the angler altogether! Green may be very proper in some cases, particularly where enamelled meads or verdant groves bound the water's edge; but where a long line of pebbled strand studs the margin of the shallow but wide streams, as those of Wales, Scotland, &c. a drab suit must be more appropriate. We would recommend the dress to be that of a shooting jacket (long skirts are inconvenient in wading, much of which practice is only necessitated occasionally in wide streams) with ample pockets; and as to the colour, so that it be by no means glaring, we think it immaterial; and the more so, as the prudent angler will allow the fish to see as little of his person as may be. There is one part of the dress which we do not recollect ever to have seen noticed by any writer, which is the hat. Now this, being almost impossible to conceal under all circumstances, should be rendered as little striking as possible. From a pebbled or sandy shore, a black hat must be most conspicuous. Here a white one would be much better, but when a white hat is contrasted by dark green scenery behind the angler's head (as must sometimes be the case, fish where he will), it must be more objectionable even than a black one. There is a drab variety, however, now in use, which avoids both these extremes; and such a one, with a low crown and wide brim, we think the best that can be worn. We know some anglers who fish in caps; they are light it is true, but they do not shelter the face from the sun, neither do they afford a convenient circular reel for a spare line, and an excellent receptacle for wet flies, as the beaver does.

3088. Waterproof clothes are very necessary in the Highlands of Scotland and south of Ireland, where short but heavy showers continually occur. Waterproof hats, surtouts, capes, and fishing boots are made in great perfection by Mr. Cording, 231, Strand, near Temple-bar. Boots for walking amongst the rocks, and which are waterproof to the knees, are excellently made by Messrs. Medwin and Co. of Regent-street, boot-makers to H.R.H. Prince Albert.

CHAP. VI.

ANGLING BAITS GENERALLY.

3089. Angling baits are of two kinds: first, the matters which constitute the usual or the occasional food of fishes; and, secondly, the artificial representations of such matters as they are known to seek after. Under this view, fishes being as we know nearly omnivorous, so the list of their edibles must be extensive and diversified. This view of the subject will

free the angler from the trammels of rule, and will convince him that he need never be at a loss to procure fish baits in any circumstance, since the localities of every water always furnish the means of support to its inhabitants. Baits may therefore be considered as always at hand, and the ingenious mind will always devise means for obtaining them. To be prepared, however, saves time and labour, and it also insures a greater proportion of success, for it is unquestionable that the appetites of the fish of much frequented rivers, as the Thames and Lea for instance, require to be pampered like our own, the quantity of food daily presented to them creating a delicacy and discernment in the choice of it. For them the worm, to be taken with avidity, must be artificially fed and purged of its grosser matters. The various larvæ of the fly, in the form of caddis, grub, or gentle, must, like worms also, be brought into a corresponding state of preparation, to suit the tastes of these well-fed gentry.

3090. *Judgment in the selection of baits* is founded on this experience in the gastronomy of the fishes of well fed rivers, and such knowledge forms one of the feathers in the angler's cap; still it should not fetter his practice or slavishly confine him to fixed rules. He may not always have such well prepared baits at hand. He may also occasionally fish in less frequented water, and the very appetite which is the most pampered is the most likely to be capricious; in which instance, and in numberless others, the angler will find that a more extended consideration of the subject will greatly assist his efforts. A perch fisher of the old school having expended his worms or his minnows, probably retreats in despair. Another who looks further takes out the eyes of those he has already captured, and continues his sport with them, or from his sandwich box he attaches a morsel of beef or mutton for the same purpose. The *Palludinæ*, or small water snails, drawn from the bottom of a river, will entice the carnivorous trout when other baits are expended; and a filamentary morsel from the tendinous parts of beef will take roach, or almost any other of the coarse fish. The pith, or marrow, running in the vertebral canal of a loin of mutton, may be employed for the capture of chub; and when the troller's baits are expended, a well trimmed piece of bacon, or other solid morsel of fat, may be successfully substituted to allure the hungry pike.

3091. *Fish baits* may also be considered geographically, and thus the travelled angler finds that the articles used as such in his own country are inefficient in others. Fish usually prefer the indigenous food of their waters, or such substances as represent it: however, they may on particular occasions, or when pressed by hunger, take a variety. In Holland and Flanders it is common to bait the hook with raw sheep's liver for gudgeons; and the stringy portions which surround the spinal marrow is considered most killing baits both for them as well as roach, dace, and chub. Fruits of various kinds are used in France as angling baits, as the inside of a red cherry for chub, ripe currants for dace, &c. &c. Carrots boiled in sweetened water will there take both carp and tench; and throughout the Continent, the cyprinus genus generally are taken by *fruits* and *vegetables*. In some other countries *animal meats*, both dressed and undressed, are principally relied on for the purpose, while in others more dependence is placed on leeches, slugs, snails, portions of frogs, and sections of the water newt. The fly-fisher who crosses the sea will not rate the discrimination of the continental trout very highly, when he observes the artificial flies he there meets with. However he must not be misled into a supposition, that these clumsy dressings are intended in every instance to represent flies common to his own country; for here also the appetite is accommodated to the circumstances around it, and the flies indigenous to France, Spain, and Germany, are many of them not to be met with in this country.

3092. *Locality with regard to baits* is to be observed within our own limits also. In our western isles a raw cockle, a prawn, or shrimp, is used to entice salmon; and in some parts of England the fresh water muscle is employed for the same purpose. Salmon spawn, as a bait for trout, was unknown in the South until within a few years, though sufficiently common in the North long ago. In some rivers grayling are more frequently taken with a gentle at midwater than by the fly. The flies also which attract fish are not the same in all parts of England. The range of the May-fly (*Ephemera vulgata*) is much confined; and in some countries, and on particular waters, it is wholly unknown. The soil, the climate, the cultivation of the land, and various other circumstances, render some insects indigenous to certain districts only; nor are the individual insects themselves in the same state of development in different districts. In the cold regions of Scotland the congenerous flies are thin, and their types require to be dressed less full than we make them in the South. Such influence has locality, that in the river Dove, flies which are greedily taken between the rocky acclivities are often refused in the campaign or more open country, although only two or three miles separate them.

3093. *Baits*, as it is well known, are influenced by seasons also. The trout is unlikely to be taken by the most tempting flies when presented to him out of season; and even the time of day in which particular flies naturally make their appearance, is the only one in which the trout can be raised by the artificial types. The white moth, or owlet of anglers, dressed with a snowy wing and peacock harl, is so excellent an evening bait in Hertfordshire, that it seldom fails to hook trout through the summer months, and that even when the brown moth, or every other evening fly, has been refused. Yet when we have, as a matter of experiment,

tried it at an earlier hour, we have never succeeded. The gentle is principally grateful to fish in the autumn, and the caddis in the spring, because at such times both are provided by nature in the greatest quantities.

3094. *By some instinctive intelligence*, the appetites of the finny tribes are only stimulated to the *seasonable* repeat; and such a knowledge will save the fly-fisher particularly much trouble, and show him the advantage of considering the subject of baits with reference to their natural history. Baits so considered will relieve him from his dependence on lists and formulæ, teach him to judge for himself, and enable him to meet contingencies. It will also increase the interest of the pursuit, by causing the practice of it to spring from his own judgment. It may be expected that we should offer something on scented baits. When we can observe that fishes depend as much on their organs of scent as those of vision, we shall be less dubious on the matter than we are now.

SECT. I. *Living Baits.*

3095. *As worms and insects* form a very great proportion of the food of fishes in general, it naturally follows that the baits we offer them are mostly derived from these sources. But these lower links in the chain of animated nature have been but little understood by authors who have written on the art of angling; and thus absurd, unintelligible, and contradictory accounts of the insect baits disgrace the pages of almost every regular treatise which has hitherto appeared on the subject. It would greatly increase the respectability of our art, and it would as certainly pave the way for a more scientific consideration of its objects, if a new nomenclature were introduced into it (particularly of the living baits in use among us), which should be formed in accordance with the systematic descriptions of naturalists. But however trivial and absurd, and however fettered by arbitrary coinage, or multiplied by provincialisms, are the names in present use, we fear that it would require infinite labour at once to overturn them. Until, therefore, a classical nomenclature, which shall bring the art of angling on a par with other liberal recreative pursuits, be universally received, we must be content with a preliminary step, by blending together a technical and a popular vocabulary, which shall be a little more in accordance with cultivated language.

SUBJECT. 1. *Worms* (Class, *Annelida*; Order III., *Terricola* Cuvier.)

3096. *Worms* (*Vermes*) form the sixth and last class of zoological subjects in the Linnæan system; and in that class the great systematist placed an incongruous mass of living matter, which even his acumen found it difficult to distribute satisfactorily, for the discordant members of it have no one character in common. Generally considered, their substance is soft, and longitudinally much extended; they are destitute of feet, and slow in their motions, and their head is usually indistinct. Some later naturalists, in their endeavours to form a more just appreciation of the great classes comprehending the inferior orders of animals, refer *Annelida* (worms, &c.), *Crustacea* (shrimps, &c.), and *Insecta*, or insects, properly so called, to one sub-kingdom, under the comprehensive term of *Articulata*.

3097. *Of the five orders* into which Linnæus divided this class, our present business is with the first only, *Vermes Intestina*. This admits of subdivision into intestinal or body worms, and earth-worms: of the former some description has already been given, when treating of the diseases of fishes (p. 947.) as well as of other animals; of the latter, as forming an important item in the angler's practice, we proceed to give an account.

3098. *The earth-worm* (*Lumbricus terrestris*). The external characters of the earth-worm differ as it branches itself out into many specific varieties; for we cannot persuade ourselves, with Mr. Barbut, that the monstrous dew-worm of the fields, the pungent brandling of dung-heaps, the red worm sheltered in our garden mould, and the marsh-worm of the edges of rivers, are the same animal, differing only in the periods of its growth; on the contrary, we believe them to be unquestionably individual species.

3099. *The earth-worm is an hermaphrodite*, and contains bisexual organs, the situation of which is externally marked by an oval mass or enlarged belt around the neck, which is called the *knot* by anglers. In some of the species of *Lumbricus* the sexual belt or ring is rather more centrally placed, as in the red-worms and gilt-tails. The sexual belt must not, however, be mistaken for the diseased enlargements of their absorbent glands, when they are unhealthy. The application of these parts together for a certain time, impregnates the ovaries underneath.

3100. *The dew-worm* (*Lumbricus terrestris*), which is also the lob-worm and twachel of anglers, and the large garden worm of ordinary language, is sometimes of such a size as to be able to extend itself to nearly a foot in length. The hinder extremity tapers more than the fore, except in that variety called the squirrel-tail, where it expands into a flattened surface, and is marked by a red stripe. The colour is a dusky red, the head more intensely red. The enlarged rings or knobs, observed in some, are not symptoms of age, as has been supposed, but are sometimes occasioned by wounds, in others by accidental stoppages of the circulating juices, and may be always brought on by suffering them to become unhealthy. In some parts the squirrel-tailed variety is preferred for angling, and the vicinity of the Thames is an instance where they are eagerly sought after as *baits for barbel*.

3101. *Dew-worms are procured in various ways*. They are sometimes dug for, which, if the ground be moist and light, is a ready way; but in the droughts of summer they retreat deep, and the search is rendered more laborious. When they are not wanted immediately, lay some wet straw over a space of ground, and the worms will on the second day be brought near the surface. If the want be urgent, pour over a surface of

earth the liquor in which young walnuts or the green shells have been steeped. If the quantity wanted be not large, strike the prong of a fork or mattock, &c. into loamy earth, the motion of which will alarm the worms, which, mistaking it for their mortal enemy the mole, will hasten out of their holes. But the most ready method of all to obtain numbers of them is, to walk cautiously over close-cut lawns or clean-fed meadows with a candle and lantern during the night. If the weather be moist, and the search be conducted with a very light tread, almost any quantity may be thus procured; for as they are blind, it is not the light but the motion which disturbs them. As each worm when laid hold of must be gently drawn out of its hole, should it break in the attempt, by no means add it to the rest unless wanted for ground bait, when the pieces may be employed to insert into balls of clay, &c.

3102. *Lob-worms* are excellent baits for various fish and various fishings. A lob worm trolled on the top of the water in a star-light night will frequently take the largest trout. We have never practised this: we never could persuade ourselves to practise it, for we think it a species of poaching; but we know that when it is done, it is too successful. A moderate sized lob-worm on a trout hook trailing the ground in a sharp stream by means of a bullet, will entice large trout; and the same method, with both hook and worm of a larger size, in deeper waters, forms a killing bait for barbel. Very large eels are taken by night lines baited with lob-worms. Barbel are still more frequently caught by them, particularly in the Thames, where the alternation of greaves and lob-worms includes almost the whole practice of all the celebrated barbel puntmen, who live by attending persons fond of this variety of fishing. Lob-worms may be procured in Covent-garden, Bell-alley, and Crooked-lane, and at most large fishing-tackle shops.

3103. *The brandling* is very common and extensively diffused, and yet is generally an inhabitant of artificial mixtures made by the industry of man, such as old heaps of compost of rotten tan, sweepings, collections from out-houses, in which horses, cows, and especially pigs, have left their dung. Old thatch, or any vegetable matter in a state of decay and not saturated with water, but particularly very old dung-heaps, will afford a profusion of this useful worm; for although they become more bright and somewhat more tenacious by scouring, yet as they are never gorged with earthy excrement, they serve for immediate use better than any other worm. Brandlings are greater favourites with country anglers than with London anglers, who prefer as a general bait the marsh and red worms. We have used them extensively, and have found them variable, but in general cases we prefer the red worm to them, except in the instance of bream fishing, when we consider them as decidedly preferable to the red variety. They are used as baits for trout, for grayling, and for all the carp species, and in fact occasionally for all the worm-taking fish.

3104. *The red worm.* This is found in the same places with the brandlings, but not so commonly or universally. In tan heaps they are very numerous, and we prefer them obtained from this source to all others. The London anglers, with whom it is a most favourite bait, get them from the banks of ditches and common sewers. Persons are also employed by the fishing-tackle shops to procure them in vast quantities for the use of those who have not leisure to search for them in their haunts.

3105. *Gilt-tails.* This is not a mere variety of the last, but a distinct species; it has however the sexual organs rather centrally placed like the red worm, or is knotted, as the anglers term it, nearly in the middle. Gilt-tails are rather larger than red worms, and appear of a lighter colour, particularly towards the tail. Our own experience leads us to prefer the red worm as a general bait; however, the gilt-tail bears scouring better, and may be kept longer than most other worms.

3106. *Marsh-worms*, known also as blue heads, are very common in moist marshy situations of every kind, from whence they derive their name. They are purposely sought for by poor persons with candle and lantern in summer nights, particularly after rain has fallen in the day. This they practise through the whole of the summer months, to supply the demand for baits in tackle shops. In colour they are of a light dirty purplish cast, and in property are valuable to the angler, because he can seldom be at a loss how to supply himself with them, from the banks of rivers, or the moist sides of ditches. When taken, if they be drawn very gently through the fingers severally, and then placed in long meadow grass rather turning off, they may be used at once, without further preparation. But, except under immediate want, marsh-worms, being naturally very tender, are rendered much better by a thorough cleansing, and being kept some time before they are used. In attempting to preserve them through the winter, much more care is necessary than is required by any other worms: the moss in which they are placed should be kept drier and more frequently changed. A little of the earth likewise should be allowed to remain with the moss when it is gathered, and occasionally a little fresh pot liquor, in which mutton or beef has been boiled (if totally free from salt), may be added, by well wetting the moss with it, and then squeezing out the superfluous moisture.

3107. *As a bait*, we consider the marsh-worm inferior to the red worm; gudgeons will occasionally take the smallest of them when well brightened by long keeping. Perch will also take three small ones on one hook, carrying the two first far up the shank, and allowing the head of the last, which should be a smaller one, to remain half pendent from the lower segment, the point being fully covered with the tail extremity. All worm-taking fish will occasionally bite at the marsh-worm, and sometimes very freely.

3108. *The tag-tail* is so called around the metropolis from the yellow tinge of its tail. It is sometimes erroneously called the turnip worm, a name specially applied to a worm-like grub or larva. It is not more common in turnip fields than in colewort plantations or in any clayey strong soil, whether arable or meadow. It is principally met with in moist spring weather. In size it resembles the brandling, but in colour it varies, being mostly of a pale fleshy hue about the body. The head is somewhat enlarged, and of a deeper red than the body in the young ones, but assumes a blue tinge in the older, about half an inch of the tail inclining to a dirty yellow.

3109. *As a bait*, the tag-tail is greatly preferred to most other worms by some anglers. We have used them, and as spring worms they have proved successful in our practice, but we do not think they merit the high character which some attribute to them. With us the principal recommendation is, that they are very soon fit for use; indeed, from a superior natural toughness of coat, they may be put on the hook immediately.

3110. *Water worms* are found in moist places, in sedges, and at the bottom of dock roots, and are said to be good winter baits. Captain Williamson describes them under the term water-worms, and there is a marsh variety, somewhat altered by locality, which may be so called. Our own experience as to their merits as baits not being extensive, we shall quote Captain W.:—"This is an admirable bait, and is ready for use as soon as taken, being beautifully clear, lively, and of an excellent medium size for most kinds of fishes. It is of a clear bluish white, or occasionally of a very light purple, growing more red about the head. By turning up the long slimy moss which grows on weirs, &c. over which the water does not always run, especially when the mill is going, and which is rarely covered more than one or two inches deep by the passing water, this

kind of worm may often be found in great numbers. The fishes seize it with avidity, no doubt from being more habituated to it by the numbers which, when the rivers are much raised by rains, &c. are washed out of the moss into the falls below, where generally the largest and boldest fish are to be found.

3111. *The blood earth-worm* has a very different origin. We have found plenty of them in accumulations of hogs' dung, &c., and occasionally they prove excellent baits, but they require *fine* hooks and a *fine* hand to place them thereon : so treated they insure *fine* sport. We once took twenty-seven tench from a pond in less than an hour and a half with them. We should add as a qualification to our record of this achievement, that not one of the said tench exceeded four ounces, and we therefore returned them to the place from whence they came.

SUBJECT. 2. *Scouring of Worms.*

3112. *All earth-worms* are found to be more alluring to fishes after they have undergone an artificial method of treatment, the knowledge of which therefore becomes important to the angler. In large and much-fished rivers (and what large English rivers are not much fished in these days ?) the inhabitants, like those of cultivated and luxurious cities, become satiated with common food. In the Thames, the Lea, the Severn, and the Wye, &c., but particularly the two former, waggon-loads of bait are annually added to the usual alimentary products of the river : thus the well-fed fish require to have their appetites pampered as much as the accomplished epicure, who looks with apathy on the meat of the shambles, but brightens at the prospect of turtle and venison ; so the oft-fed fish require that the worm be cleansed from all dross, and that his dyes be heightened by artificial scourings, thus proving, that although the voracious cod, to allay the craving of its stomach, will swallow the plumb-lead instead of the bait, yet that in matters of mere taste fish are not without a decided preference in the nature and state of their food. Worms are extremely voracious, and consume vast quantities of both animal and vegetable substances ; for they, like ourselves, are omnivorous. Vegetable matter they gain from the surface of the earth ; animal matter is received by taking in earth itself, which is saturated with animal matter, living and dead. When worms are first taken they are usually gross with intestinal matter, and soft by the increased secretions of their bodies. By purging them from the earth they contain they are rendered more *bright*, and on being cleansed from all feculence, they prove much more palatable to the fish. As this process of cleansing promotes absorption of superfluous moisture, they also become thereby firm, or, as it is termed, *tough*, which is of much consequence to the fisherman, since in this state they are more readily retained on the hook.

3113. *The process of worm scouring* is somewhat mechanical, as well as medicinal. By insinuating themselves, in their attempts to escape, between the fibrous parts of hard vegetable substances, they compress much excrementitious matter out of their bodies. Sound moss is the best scourer, as being a matter that is in a state midway between dry and moist. If the scouring matter, whatever it is, be too moist, the worms' breathing pores are stopped up, and if too dry, the same effect follows, still more speedily.

3114. *Having carefully freed a quantity of such moss* from grass, &c., but particularly from thorns, moisten it, and put in a sufficient quantity with the worms, which in three or four days will be properly scoured, appearing then brighter and more active than when first taken. They should during their scouring be examined daily, and those which are injured and diseased ought to be carefully separated from the rest, or all will participate in such injury or disease. Some anglers hastily scour their lob-worms by plunging them into water for a few hours, and placing them into moss afterwards.

3115. *To preserve worms for use.* Shred some hard fat without a particle of salt in it ; suet is the best, and mutton kidney suet best of all. Having chopped it into small pieces, and thrown it into a saucepan containing about a quart of water, let it boil slowly, until the suet is dissolved ; and then having ready some well-washed hempen sacking or wrapper, that has not enveloped anything noxious, dip it into this liquor. When well soaked in it, and having become cold, then mix some fresh mould with the worms, and put the whole into a deep earthen vessel, or small tub, which is to be preferred : into this pour a good stock of marsh, or red worms, and over the top tie a cloth that will admit air, and yet prevent their escaping ; place them in a cool situation, and the worms will feed and cleanse themselves, and keep lively and fit for use for many months. We would observe, however, that if the angler have different species of worms, let him keep them in separate vessels, so that he may at any time select the sort and quantity necessary, to be placed in moss preparatory to his using them. (See Salter, on the *Keeping of Worms.*)

3116. *The slug (Limax)* is occasionally used as a bait for fishing. It is a molluscous animal, of which there are sixteen British species, and probably all have been sometimes employed as fish-baits, but the white (*L. alba*), and the large black (*L. ater*), as well as the common field-slug (*L. agrestis*), are those most usually met with, and therefore most likely to be used ; for we are not aware that they have ever proved sufficiently attractive to become much in request. The white slug has occasionally been taken by chub and perch ; and the large black slug, when cut open so as to expose its whitish inner substance, has been gorged by jack, large chub, and now and then by trout also. Barbel, also, have been sometimes taken, as we have heard, with the large white slug.

3117. *Shrimps* are most excellent baits for all fish frequenting docks and waters which meet the tide. In such places shrimps are often found in abundance ; and there perch are more readily taken with them than by any other bait whatever. To prove successful, however, it is necessary that they should be alive, or very newly killed.

CHAP. VII.

INSECTS USED IN ANGLING.

3118. *The study of entomology*, at least so far as regards a popular acquaintance with the forms, habits, and changes of *insects*, may be with considerable advantage recommended to the angler's notice. It is not only that his opportunities might continually stimulate him to such inquiry, but the prosecution of it is also blended with successful practice, which is in no small degree dependent on entomological knowledge. In a philosophic point of view, angling has hitherto been confined to the mere ensnaring of fish, and so little has science entered into the sport, that the practitioner has mostly contented himself with the names of caddis, gentle, and fly, and has remained as little mindful of the vast field of interest open before him, as the fish that swallowed the one, or rose to the surface for the other. Were it otherwise, how much higher would our art rank than it does at present. We can figure to ourselves few pleasanter tasks than to open if it were only the title-page of angling philosophy to an inquisitive Venator. To wet a line with such a one, we might be tempted to assume the character of Piscator, and thus accompanied, to sweeten our travels and our toils by forming interesting intimacies with the numerous natural objects in our progress. Or were we gifted with the didactic powers of the author of *Salmonia*, we might adorn ourselves with the cloak of Halieus, and call around us the kindred spirits of Poietes, Ornither, and Physicus, to listen to our tale. Be assured, brother angler, that if you will furnish yourself with the *Entomology* of Kirby and Spence, and apply yourself to the study of this science as there unfolded, you will be amply repaid, first by the piscatory knowledge imparted, and next by the wide field of interest and amusement it will present. It was our original intention to have offered a general outline of entomology to the angler, but our present curtailed limits will not permit it. Our wish, however, to press on the angler's notice the benefits of this study remains the same, and we again recommend it to his consideration.

SECT. I. *Coleoptera*, or *Beetles*, as *Angling Baits*.

3119. *The cockchafer* (*Melolontha vulgaris*), also called May-bug, dor, or dummador, is so well known as to need no portrait. It appears towards the latter end of April or beginning of May in immense numbers, and continues a few weeks. About July a smaller species likewise comes abroad, differing chiefly in the size. It is the larva or caterpillar of this beetle which forms the sand or white worm bob.

3120. *The dung-beetle* (*Geotrupes stercorarius*), known also as the evening beetle, is the large humming insect which flies round us on the decline of day, and may be observed settling on the new-dropped dung, under which it insinuates itself, and from thence makes its way into the ground to deposit its eggs. Hither also it retires on the approach of cold or wet, a fact important for the angler to know, as he can, by turning up the dung, and observing the holes in the earth, follow them by a spade, &c., and perhaps in doing this he may also turn up others at the same time, as it is the habit of two or three species of this family of beetles, when they descend, to carry down pellets of dung with them, into each of which an egg is deposited as a nide for the future larva or grub. The beetles that have this habit of laying their eggs are all found to be good baits for dipping or daping. The green garden and the golden bronze beetles are only the male and female of the *Cetonia aurata*, found in our gardens under the roots of our bulbous vegetables, and in potato grounds, &c. &c. Some anglers prefer these to all others. The order of *Coleoptera* is the largest of all, containing upwards of 3,500 known British species. Some anglers, favourable to using beetles as fish baits, will not use them until they have taken off the elytra, or hard case, which covers the membranaceous wings; but we have not observed that any benefit was gained, but rather the contrary effect arose from the practice; particularly when a large black beetle, which is a famous chub bait, was so served and dipped with; for under such circumstances, neither chub nor trout, although the latter are equally fond of it as the former, were on the alert to seize it; but, on the contrary, after a slight view, they left it. The bronze or copper-coloured beetles are often preferred by fish to either of the others, more particularly by chub. In a warm lowering day, when chub are heard to smack the under surface of the large dock leaves as they spread over a piece of still water, then this beetle will usually be taken by them very freely. When there are sharp streams, before you approach them too near, begin to fish just over the bank, and advance gradually until you can fish the stream throughout; to do which, begin at the top, and fish it regularly down, throwing your bait very lightly across it, letting it go sometimes just under the surface, at others about midwater, particularly in the deeps, and between weed beds.

3121. *On arming a hook with a large beetle*, we differ from some anglers, and propose that the bait be passed upon the hook *head foremost*, so that in dipping it on the water lightly it may be made to imitate the attempts of the insect to rise again. We also recommend that the beetle be placed crosswise on the hook, as the most showy and natural

mode of displaying it. Beetles may be preserved for a long time in a box with light mould; and if it be known what trees they frequent, put some of the leaves or small branches with them.

3122. *The small beetles*, as regards the angler, may be divided into the round and the elongated. Among the former we might reckon the *Hister*, *Chrysomela*, *Cassida*, *Coccinella*, &c. &c. These are all represented artificially by the palmer-hackle, which has been by some authors erroneously named a buzz-fly; but the real buzz-fly is, or ought to be, a bombylius, or species of bee-fly: such without doubt it was originally intended to represent. The round and short beetles may all be used with advantage by whipping with one at a time on a very fine hook. If dipping be employed, it is prudent to use stronger tackle, and to put two on the hook.

3123. *The artificial representatives* of these varieties are dressed under the names of Marlow-buzz, palm-fly, hazel-fly or Welchman's button, the fern-fly, shell-fly, shorn-fly, &c. &c.; but little agreement is to be observed in the accounts.

3124. *The elongated beetles* are *Cerambyx*, *Cantharis*, *Elater*, *Cicindela*, *Staphylinus*, *Leptura*, *Forficula*, &c. &c. They are also used with success occasionally by whipping, but more frequently they are employed in dipping. They are not, however, favourites with many anglers: we must, however, except the *Telephorus*, from whence we obtain the favourite case-winged orange-fly.

SUBJECT. 1. *The Grasshopper (Gryllidæ).*

3125. *Of the value of the grasshopper* to the angler we can speak in terms of commendation, as a most tempting bait for chub and grayling. Mr. Daniel says, "Grasshoppers from June until September are to be met with in every pasture field or meadow, especially in a hot dry summer, but most plentiful in a kind of old, short, mossy grass; the middle sized and the greenest are the best, and may be carried in a box with a notch cut in the edge, wide at top and narrow at bottom, which, by lifting up the box-lid gently, leaves just space enough for the grasshoppers to creep out, which they will do separately: some take off the legs in baiting with them, but they answer better whole if properly placed to stand on the back of the hook, which should be entered under the head and lodged in the body. This is a *fine and tender* bait, and is eagerly taken by many kinds of fish in clear streams about mid-water, with the hook No. 6., a fine gut, and one small shot. With grass they may be preserved as directed in the caddis."

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DIPPING WITH GRASSHOPPER.

3126. *The most effective method of using the grasshopper*, particularly for chub, we have in our own practice found to be (when these fish are known on a very hot day to be basking under the surface of the plantain or water-lily leaves (*fig. 503.*), their situation being marked by a kind of smack they give every now and then with their mouths applied to the leaves), to let a hook with a grasshopper fall on any one of such leaves from whence the sound issued. Draw the grasshopper to the edge of the leaf, and as it rolls into the water it is ten to one but it will be taken by a chub. In this way in some ponds at Godalming partially shaded, we have in the brightest days in July had most excellent sport.

The cricket (*Acheta domestica*) serves

the same purpose, but is we think very inferior to the grasshopper.

3127. *Even the white butterfly* is used with some effect as an angler's bait. It must be carefully hooked and either daped with or delicately thrown on a part of the stream commencing an eddy, and is then likely to be taken by a trout. The *sphinx* or hawk-moth is also a favourite evening bait with some anglers: these insects fly fast, and are the largest members of the order, and appear to hold an intermediate station between the butterfly and the moth: they fly earlier in the evening than the latter, and are exteriorly marked with a characteristic spot on one or both wings; and their caterpillar or larva is distinguished from that of the moth by a remarkable spine or horn at the tail. The Burnet *sphinx* is met with in hot summer days towards August in great numbers, flitting about in the meadows with a short and feeble flight from stalk to stalk. It is somewhat less than the Orf-fly; its upper wings oblong, of a dark shining green colour with blood-red spots; the under ones a vivid red with dark green edgings. This is *Anthrocera filipendule*.

SUBJECT. 2. *Moths as Angling Baits.*

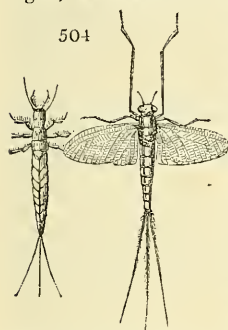
3128. *The mealy white*, the *mealy cream*, and the *brown moths*, Nos. 39, 40, 41, of our artificial fly list are derived from the various *Bombycidae*. The *H. humuli*, *T. pronuba*, and others, in their living form, will take fish, and also if artificially made. We are

inclined to think that the peacock-fly of some anglers is derived from the larva of the Drinker Moth (*Odonestis potatoria*), which is abundant in early summer upon coarse grass, in damp places especially, and must often fall into the water, on being stung by some Ichneumon fly, and from other casualties. However, the iridescent hues of the peacock's feather are suggestive also of the beetle tribe.

3129. *The neuropterous, or lace-winged insects*, derive their name from their four transparent reticulated wings. At the tail they have often appendices in the form of pincers, but no sting. The order contains six genera, most of which, as being decidedly aquatic in their immature state, and remaining almost affixed to the margins of the waters which they frequent, are interesting to the angler, and no less important by the use he makes of them.

3130. *The dragon-flies*, which are of the *Neuroptera*, do not offer many subjects worthy of the angler's notice as baits. The small slender bodied *Libellula*, and a few others of the same size which have closed wings, are occasionally preyed upon by trout and chub. The larger are likewise sometimes taken by salmon, but as they affect more quiet waters, they are not likely to present themselves so often on the rapids haunted by trout and salmon as many other insects. Still as they form a very distinguishing fly on the lakes of Wales and Scotland, and are models of some of the showy salmon-flies used among northern anglers, they are of some consequence to the fishers of distant waters. When used for dipping, some anglers shorten the wings and curve the body on the hook; in this way, in the Severn and the Wye, the largest chub are taken.

3131. *The Ephemera, or Mayflies*, are among the most important living baits to the fly-angler, as the worm is to the bottom fisher. These beautiful insects appear to be the favourite food of the trout and grayling, and are as nutritious to them as beef and mutton are to us, giving extraordinary strength and vigour to their frames, which is proved by the difference which appears between those trout and grayling, but particularly the former, that feed on them, and those trout and grayling that live where these insects are more sparingly bred. The day-flies, as they are called, are not however strictly ephemeral, for some live but an hour or two. They are produced from larvæ which inhabit rivulets, brooks, and the lesser rivers; and which, having become nymphæ, crawl to the water's edge, where they quit their coverings, and commence their existence as winged insects. Yet feeble and weak with this great change, they have once more to quit the dress they have but just assumed for a full birthday suit, and completely developed organs. They now leave the water's edge, and seek the neighbouring trees or bushes; where, strengthened by the warmth and light of the sun, they pass from the *Pseudimago* to the *Imago*, select a



EPHEMERA AND LARVA.

mate, consummate their nuptials, and deposit their impregnated ova in the waters from which they so lately emerged. These various processes are all gone through in some species within the hour: some others are allowed two, three, or more hours of transient existence. In a very few, life is prolonged to a second or third day; but the greater number never see the light of another morn. Their existence usually terminates on the spot that witnessed their birth; and the same pool which found them life receives their last remains; for after the exhaustion occasioned by depositing their eggs in the water, they usually become so enfeebled as never to rise again, but either are swallowed by fish, or are washed to the bottom of the stream.

3132. *This limited existence* is in accordance with the wisdom and beneficence marked in the whole round of animated nature. Nor is a short life assigned to the insects themselves; they have already lived under other habiliments, most of them a year, some two years, and it is affirmed that a few varieties exist even three years in their aquatic states. Were the lives of the *Ephemeridæ* protracted to the usual period of insect existence, the air would be loaded beyond endurance! On the banks of the Seine and the Marne, in the vicinity of Paris, the *Ephemeridæ* exhibit a singular spectacle for some days about the middle of August. For several hours after sunset they rise in such vast multitudes that they appear like the flakes pressing upon each other in a heavy fall of snow. By and by the whole surface of the earth is covered with the swarms that have fallen upon it, after having finished their short existence.

SECT. II. *The Ephemeridæ as Angling Baits.*

3133. *The angling history of the Ephemeridæ* regards their successional varieties, and therefore embraces their natural history generally. The entomological list of *Ephemeridæ*, and the angler's practical knowledge of *May-flies*, *duns*, *spinners*, &c. have never been brought into accordance. It is probable that the naturalist is ill-acquainted with some of the *Pseudimago* forms known to the angler; and it is certain that the angler is not in

possession of many species marked in the British Entomological Catalogues. Of the successional races of *Ephemeridæ* our angling list will supply some account. It will then be seen that, to prevent an overwhelming influx, and yet to diffuse their advantages as food for fishes and birds over an extended space of time, Providence has ordained that they emerge from the water at various periods, the early varieties appearing in February and March, and others so late as October and even November. It is interesting to observe the influence of light and heat upon the several races. The early *Ephemeridæ* are small and dark, but as the season advances, they enlarge somewhat in size: the March brown and the whirling dun are both larger and brighter than their precursors; and though the enlargement is not marked in all, yet the alteration in colour is almost universal; the browns becoming orange and yellow; the reds turning to cream colour; and the blues from a deep tinge to a pale dun. In the warm season of May and June, we are greeted with the *E. vulgata*, or May-fly of the angler, the largest of the English species. As the summer light and heat retrograde, so the ephemeral races which follow are seen to become darker and smaller to suit themselves to the varying season, and to catch the benefit of the diminished heat and light on their absorbent colours.

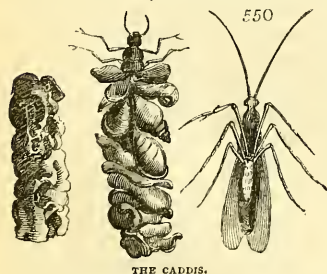
3134. The elegance of the form of the *Ephemeridæ* generally cannot have escaped the angler's notice. When sitting on the waters, few insects look so elegant as the green drake, and the graceful rising and sinking evolutions of the grey drake are also very striking. The markings on the wings of March browns exhibit great beauty; and the erect position of their wings adds much to the grace of their carriage. The varieties of form in wings are not very great among the *Ephemeridæ*: the colours, however, are much varied, and the reticulated structure is in some much more prominent than in others. Some have transparent wings, some hyaline, some spotted; some are white, and others of a glossy black, as those of the grey drake. A few species differ in tint, the males from the females; all, however, are found to change their skins, after emerging from the pupa, and so pass from *Duns* to *Spinners*. The tail is a distinguishing feature in the *Ephemeridæ*, being armed with either two or three setaceous appendages (or, in angling phrase, whisks), according to the genus: *Potamanthus* three, *Baëtis* and *Cloëon* but two. In the *Ephemeridæ* *vulgata*, or May-fly, they are carried in an elevated manner; which circumstance, united to the green markings of the body, has occasioned this fly to be called green drake in many places, and in others the cock-up or tilt-up fly.

3135. The bodies of the *cphemera* tribe are universally long and slender, and in some of the varieties they are beautifully marked, as in the May-fly, where the segments are alternately green and yellow; and in the grey drake, where the mealy yellow is enlivened by deep brown stripes. The little May-dun is singularly beautiful, from its bright yellow hue. Some have orange bodies and dun wings, others have dun bodies and orange wings, and some are variegated, while a numerous race exhibits blue in all its tintings. Of the importance of this family to the angler, our list will give a proof when we enumerate forty-eight British known, and remarkable species, with numerous others not so decidedly acknowledged as more than varieties. Several of these also appear again in the autumn, and may therefore be with justice reckoned twice over.

3136. Dipping with the natural May-fly for trout is a most killing practice. It is usual to put two on the hook at a time, by inserting the point of the hook into the thickest part of the breast of one between the wings, bringing it out a little below the opposite point in the back; the other is passed tail foremost, so as to cover the remainder of the hook entirely. In treating of dipping generally, the use of the May-fly thus employed will be enlarged on. Both the green and the grey drake are used in still and streamy waters, and so greedy are the trout after them, that from the first morning appearance of the green drake, until the grey comes on in the evening, their eagerness appears unabated. The nutritious effect of this food may be particularly remarked in the more than usual strength of a hooked trout at these times.

SUBJECT. 1. The *Phryganeidæ*, or Caddis-flies as Baits.

3137. The *Phryganea*, or straw-bait, or case-fly, is seen with antennæ bristly, and longer than the thorax; mandible short, corneous, arched and sharp; maxillæ membranaceous; feelers four; stemmata three; wings incumbent, hinder ones folded. The spring-flies are divided into such as have two bristly processes to the tail, and such as have the tail plain like the *Phryganea*. The bicaudated English species are not numerous; but of the united varieties known to naturalists, there are upwards of seventy. The *Phryganeidæ*, straw, or caddis baits (fig. 505.), only yield in importance for angling to the *Ephemeridæ*, but to them both in numbers and attractive qualities its members must give place. The popular term spring-fly, like that of *Ephemeridæ*, has no strict reference to their natural history. For as the *Ephemeridæ* live, some much less and some much more than a day, so likewise the *Phryganeæ* are not all born in the spring, but fresh species continue to appear at various periods;



the early spring months bringing the Early Red fly, and the autumnal season closing with the fetid brown. Thus, like the *Ephemera*, they appear in successional groups, and furnish food for fishes, birds, &c. as well as sport for the angler. The caddis resemble the moth tribe in the carriage of their wings, particularly of the division entitled *Tinea*, from which tribe it is not by ordinary observation easy to distinguish them. But the naturalist does it readily by their palpi or feelers, and by the stemmata on the top of their heads. They are also further distinguished by their wings being generally destitute of the powdery matter that embellishes those of the moth; instead of which, the wings of the *Phryganea* exhibit a curiously wrought reticulated structure; neither have they the spiral tongue of *Lepidoptera*. The spring-flies proceed from an aquatic larva, which inhabits a curiously constructed tube, in old language called a *cad-case*. The varieties of English *Phryganea* are considerable, though by no means so numerous as those of the *Ephemera*: their size is, however, usually larger. The most prominent variety is the *P. grandis*, abundant on the Thames.

3138. *The stone-fly*, which also proceeds from a water larva, presents a thick body an inch in length, of a brown colour, with yellow markings, particularly on the under surface of the belly. The upper wings are gray, speckled, and streaked with dark cloudings; the under wings are of a yellowish brown, and lie flat on the back, the upper folding over them. The habits of the stone-fly are simple: it lives but a few weeks, during which the female may be seen paddling on the top of the water while depositing her eggs. They fly little, but are seen crawling on almost every substance near the waters where they are bred.

3139. *As a dipping-bait* the stone-fly is a favourite one with many anglers, both for trout and grayling; with the latter we have been very successful by the method called sinking and drawing. It is used by putting either two at once on a hook (No. 5. or 6.), or one on a No. 7. When two are put on, we always placed them ourselves tail to tail. We have also seen them used otherwise, by running the point of the hook directly through one which was drawn up the arming of a bristled hook (No. 6. or 7.); the other was passed tail foremost its whole weight over the hook, the head, breast, and wings covering the point and barb.

3140. *The Hymenoptera, or membrane-winged, follow these.* They are all furnished with four membranaceous wings, and a mouth strengthened with jaws. Most of the females have a piercing oviduct, with which they insert their eggs within wood, and at the same time they discharge an acrid fluid, which causes the vegetable sap to produce excrescences called galls; these form a nide for their larvæ. Some of the species are provided with a sting also, which, however, is generally concealed within the abdomen.

SUBJECT. 2. *Ichneumon-flies as Baits.*

3141. *The Ichneumonidæ are a family of these Hymenopterous insects, which have a curious history.* They are parasites upon other insects, especially on the larvæ of *Lepidoptera*, an order which includes moths and butterflies. They received the name of *Ichneumon* from the ancients, from a resemblance to the quadruped so called, which was believed not only to demolish the eggs of the crocodile, but even to enter into its body and devour its entrails. So the Ichneumon-flies lay their eggs in the bodies of caterpillars, where these hatch and feed upon their flesh, ultimately causing their death.

3142. *As angling-baits, these Ichneumon-flies can be strongly recommended, being frequently found in the stomachs of trout.* As the providential check on the multiplication of the insect races, they abound everywhere. There are upwards of 200 British species described by Mr. Stephens of the restricted genus *Ichneumon* alone. One of the largest British species of this family is *Pimpla manifestator*. They much resemble the ant-flies in their general appearance, but may be distinguished by their vibrating antennæ, from which they used to be called *Muscæ vibrantes*, and also frequently by their *ovipositor*, or sting, at the tail. One species is figured in Ronald's *Flyfishers' Entomology* (fig. 39.), and forms his type for the Orange-fly, a great grayling-killer. It is a curious reflection, that but for the hosts of ichneumon-flies, insects would rapidly increase, to the inevitable destruction of man, through the destruction first of the vegetable kingdom.

SUBJECT. 3. *Tenthredinidæ, Saw-flies, as Angling Baits.*

3143. *The saw-fly of anglers* is drawn from this source, being a large bluff fly very much covered with hair, like the *T. Amerina*, without its rufous colouring. The *Tenthredo lutea* might be used with advantage as a dipping bait, from its size and brilliant colour. As an artificial fly it would also, from the circumstances of its locality, be likely to prove a very killing bait. This genus, without doubt, would furnish many other valuable types for artificial flies. The turnip-worm, bark-worm, and ash-grub, are also derived from this source, being *tenthredinous larvæ*. There is also a splendid species of *Tenthredo* of the size of a wasp, but rather thicker in its body, which is of a bright yellow colour barred with black. This, we conceive, is frequently intended for the wasp-fly by some authors on angling: it is *Allantus vespiiformis*.

3144. *Sirex, or tailed wasp*:—antennæ filiform, with not less than twenty-four joints, sometimes more; palpi four; hinder ones long and clavated; mandible thick, short, corneous, and dentated: jaws ciliated; wings lanceolate and flat; abdomen sessile, and terminating either in a sting or an oviduct, which is exerted, stiff, and serrated. The larger *sirex* forms a very excellent salmon fly, and we think that in mountainous countries, as in Scotland, it is even more killing than the wasp-fly; it may be also dressed

much larger. The *larvæ*, which measures about an inch and a quarter in length, is of a yellowish white colour, and is found imbedded in decayed firs and pines, where it is buried by the ovipositor of the parent fly: it is not unlike the larva of some beetles, but is thinner in proportion, and is furnished with a tail spine. It would without doubt prove a useful bait also.

3145. *Vespidæ* (wasps)—antennæ filiform, first joint elongated and cylindrical; mouth corneous, with compressed maxillæ, without proboscis; palpi four, unequal and filiform; eyes lunated; body smooth, with the sting concealed. As angling baits derived from the wasp family we may notice *Vespa vulgaris*, or common wasp, and *V. crabro*, or hornet, both of which are imitated for salmon fishing; but we much doubt whether, in northern districts, the artificial fly called the wasp, or hornet, be not drawn from the sirex, which is indigenous to countries where coniferous pine trees abound. The *larvæ*, or wasp-maggots, often called wasp-grubs, are also an angling bait, as will appear in our description of *larvæ*.

3146. *Apidæ* (bees).—The generic characters of this valuable and interesting insect are, antennæ filiform; mouth horny; maxillæ and labrum membranaceous at the apex; tongue inflated; palpi four, unequal, and filiform; wings aculeous, in the females and neuters concealed within the abdomen. There being upwards of one hundred indigenous species, of the value of the *Apis Mellifica*, honey or domestic bee, it is needless to treat.

SUBSECT. 4. Humble Bees (*Bombus*).

3147. The *humble bee* (*Bombus*), either artificially or naturally, is a good bait for trout and chub; for the latter it is certainly one of the most killing that can be offered. Naturally it may be used as a whipping bait, or for dipping with; and it succeeds best in one or other of these methods, according to the situation in which it is used.



HUMBLE BEE.

The varieties of the larger villose or hairy bees are numerous, but we have observed that those marked with black and orange bars appeared to be preferred. We have therefore principally confined ourselves to, first, the *large field humble bee* (*B. Lapidarius*) the female of which is much the largest, being almost an inch long; and thus it makes a most magnificent bait for chub. It is of a deep black, except the end of the belly, which is of a bright orange coloured red. The male is much

smaller than the female, but is similarly marked. Second: the *ground humble bee* (*B. Terrestris*). This is another very large black variety, with a yellow barring on the back, and its abdomen tipped with a considerable portion of white. Third: the *garden humble bee* (*B. Hortorum*) is considerably smaller than the other, and has the abdomen tipped, like *B. Terrestris*, with white; but it has more yellow displayed in its barrings.

3148. Some anglers remove the wings when they use them, which is totally unnecessary, and is also unnatural; and we believe that the buzzing noise caused by the action of the wings, and the disturbance to the water, tends, on the contrary, to attract the fish, which are on the look-out for these accidents to insects. Other anglers are equally careful in removing the sting, which we likewise believe to be equally unnecessary; but there is at least a stronger pretext for taking away the sting than for removing the wings; so those who advocate the necessity of the operation may perform it thus: hold the bee between the finger and thumb, and pressing the belly until the sting is protruded (but by no means draw it out, as that usually brings with it the intestines), cut it off close with a pair of scissors. Humble bees in almost any number may be procured from clover fields, bean plantations, &c. &c., and may be kept with flowers a few days. Bee grubs are valued also by some anglers, and will be described hereafter. Fishermen differ in their accounts of the disposition in fish to become sensible to pain from a puncture of the sting. Some experiments would seem to favour an apparent dread of the bee by fish; we will not deny the circumstance, but we will state that we have used it successfully in dibbing many times, and hope to do so again.

SUBSECT. 5. The Ant-flies as Angling Baits.

3149. Of the ants there are two genera, *Formica* and *Myrmica*, our different red and black ants. The former are more common in woods, the latter present themselves almost everywhere, and nowhere more than in our gardens. Each of these varieties lives in communities after the manner of bees, and their industry and internal economy will repay any attention that can be bestowed upon them. At present we only regard them as, to a considerable degree, objects of attraction to fishes from being so often found on the water, and thus thrown in their way. The societies of ants are composed of males, females, and neuters. The males and females only are winged; the neuters are apterous or wingless. The males and females appear to be gifted with wings to enable them to fly to distant places to colonise fresh localities; and it is in this travel that they so frequently fall in the way of the fish. The female ant is several times larger than the male, being about the bulk of a moderate-sized house-fly: the male is scarcely a third of the size. As this disparity exists in both communities, the black and the red, so we may thence account for the introduction of four

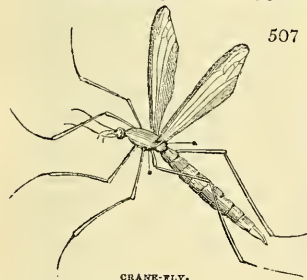
artificial ant-flies—a large and small black ant, and a large and small red ant. We may also be guided in our choice of these by attention to the natural history of the insect. In rivers which border woody situations it is probable that the red ant will abound; and when such is the case, the prudent angler will confine himself principally to that variety; but, on the contrary, when meadows surround the waters, it will be likely that the black ant may be most plentiful, and, as such, it will be the most proper for use. And as the black is in all cases more common than the red, so more dependence is to be placed on it; for it may be regarded as a general rule, that those baits naturally most common to any situation are those that will prove most constantly attractive to fish. As baits for whipping during the time they last, they are with some great favourites; and we know they will take fish, particularly dace, and if sunk a little below the surface, roach also. As bottom baits they may likewise be used, putting two of the cocoons on a hook, No. 7. or 8.; of course we mean the larger sort. The season for using them is June for trout and grayling.

SECT. III. *The Diptera as Angling Baits.*

3150. *The dipterous insects* have two wings only, with halteres or balancers as a counterpoise at their base. Among the genera are, 1. the *Æstrus*, or gad-fly, which we shall pass over,

3151. 2. *The Tipula*, or crane-fly, or long-legs, a nickname which is usually preceded by some trivial personal appellation, as Gaffer, Harry, or Father, and as far as legs go they certainly well deserve the name, as theirs are at least three times the length of the body. They have two transparent wings, long and narrow, without ailerous or petty wings; instead of which they have two fine balances, with long pedicles and round heads like a mallet. In the corselet are placed four stigmata, and on the breast appear two stemmata or additional eyes, as supposed by Réaumur. Each ring of the body is composed of two half cylinders joined into one by means of a membrane, which structural peculiarity affords them room to distend or close up at pleasure. These gaffer long legs of our schoolboy days are not only common in themselves, but numerous also in their species, and hence are likely to come much in the way of fish. The smaller *Tipulæ* are even more numerous than the larger, and of greater variety; and the inference is, that they must be produced in continual successions, or otherwise the original insects must remain through the year, as it is seldom that they are not to be met with. Their intimate resemblance to gnats is of no consequence to the angler's practice, as the artificial dressing for one represents the other also.

3152. *The varieties of Tipulæ*, which may be considered as particularly worthy a place in the angler's list, are, first, the field crane-fly (*T. rivosa*, fig 507) measuring an inch and a half in length, with transparent wings



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CRANE-FLY.

having dusky markings. This large variety is a good dapping bait as a natural fly for chub, for which two should be used on one hook. Dressed artificially it will also kill all the fly-taking fish. Secondly, the garden crane-fly (*T. hortorum*) is less than the former; its wings are transparent, with whitish variegations. The species *T. oleracea* and *T. cornicina* it is unnecessary to describe, as the artificial representations of the *T. hortorum*, or the garden crane-fly, will answer for these likewise. Thirdly, the yellow striped crane-fly (*T. crocata*) is a species remarkable for lively colours, and well deserves the angler's notice, as there are weathers and waters which would make its brilliancy useful, such as a gloomy blustering day, or a turbid water, *i.e.* one tinged by the effects of a flood. It has a polished black body, with yellow wings round the belly part of it. Fourthly, *T. plumosa*: a large variety of this species enters the angler's catalogue under the name of the spider-fly. Both its larva and pupa are aquatic. Its larva is certainly aquatic, but whether the pupa state is superinduced within or out of the water, we apprehend to be a matter of doubt; nor have we perfectly assured ourselves of the true character of this angling bait. It is still to be ascertained whether as a pupa it creeps

among loose gravel, stones, and sand, to await its final change; or its transformation from a pupa into the imago or fly having already taken place, it has yet to remain some days to perfect its wings. To the angler as an angler the alternative is immaterial; but to the naturalist it is otherwise.

3153. As a dipping bait the Harry long-legs, as this fly is called by the vulgar, is a great favourite with some anglers, who draw one on the hook from the breast upwards, so that the wings may extend themselves, while the lower part of the hook should be covered over with another. In this way chub, and occasionally small trout may be taken. Salter, who was celebrated as a dipper for chub, says, "It is a killing bait for them and trout in August and September." We agree with him as regards chub, but we think that it is not so killing a bait for trout; at least in the Thames and the Lea, where this excellent angler exhibited his skill, there were few trout to be dipped for, and still fewer to be taken.

3154. 3. *Muscidæ* (flies). The extent of this class may be judged of from the circumstance that in Gmelin's edition of the *Systema Naturæ*, 550 species of flies are described; which are, according to Harris, not one half of the number of English species alone. The *Muscæ* have been divided into those with two short feelers or palpi, and those without; they have also been separated into the downy or hairy, and the smooth. Dr. Shaw further groups them according to the antennæ, as being simple, or armed with hair. Mr. Walker's monograph on the British Diptera is the completest.

SECT. IV. *Flesh-flies as Angling Baits.*

3155. Of the angling *Muscidæ* it is difficult to give a correct list, so many being used by some anglers that are not common to others. We conceive that we have ourselves used twenty species, and we might have used twenty more, without exhausting those which have proved valuable acquisitions to the angler's catalogue. The early Black, No. 2. of our list.

is, we believe, a musca: the cowdung-fly, No. 4. also; the wasp-fly is *M. vespasimilis*; and there are several others less legibly defined, which refer both to the practice and descriptions under vague and discordant names of angling authors.

3156. *The flesh-flies* are, *M. Vomitoria*, a blue-bottle, which forms an excellent whipping bait for dace. *M. Carnaria*, or large blow-fly, is one of the hairy or bristly muscæ; and it may be remarked of this species, that it is viviparous, and produces living larvæ instead of eggs. *M. grossa*, a still larger fly than either of these, is hairy, and has bristled antennæ. Each of these varieties may be used for whipping for dace, &c., and their size makes them also good dipping baits for trout, chub, roach, dace, &c. Grayling also may be taken with them, as we have witnessed to their cost and our gain.

3157. *As an evening bait*, a little before sunset, the natural large black flies are killing baits for chub when dexterously thrown over their haunts, under bushes, &c. As the sun goes down, the flesh-fly should be changed for the moths; first the brown, and at last the white. The angler's bait, called the gentle, as is well known, is the larva of the flesh-fly.

3158. *The gnat (Culex)* will engage a little of our notice. It has antennæ filiform, and approximate; in some, simply feathered; others, in whorls; the vagina is exserted, univalve, and flexible; setæ, five; palpi, two.

3159. *The gnat as an angling bait* is occasionally effective, particularly in fine waters and bright skies, and even more particularly as the second dropper under a cloudy one. The most killing artificial representations of gnats are the black, the blue, and the midge; all the other varieties also may be figured by these, provided the size and colours are varied according to circumstances, to suit species, seasons, and waters. Among these, the following appear the most prominent:—The black gnat (*C. reptans*), of a very dark colour, with transparent wings, legs marked with a bar of white. Of all the gnat varieties, and they are very numerous, this is the most common. The common gnat (*C. pipiens*) is numerous, and the most inveterate bloodsucker of all the race. Its wings are transparent; its body is cinereous, with eight brown rings: the antennæ of the male are pectinated or feathered. The next is the midge (*C. pulicaris*), which is a still smaller species, of a dark variegated hue, whose name is derived from the Swedish term for gnat: this also appears in the summer. Our limits will not admit of an extension of these, although there are many more; but as they are subordinate to these in attractive qualities to fishes, they can be dispensed with. We hardly need observe, that it is the artificial representations of these which are used by anglers. The blue-bottle, and indeed all the large *Muscæ*, or flies, are however occasionally daped with in their natural state for trout, grayling, &c. &c. They kill also even more effectively when dressed, and may be so obtained of all fly dressers.

SUBJECT. 1. Of Beetle Larvæ as Angling Baits.

3160. *Bobs, or grubs* of the angler, are the larvæ of the *Scarabæi*. The white worm-grub, earth or white worm-bob, are the produce of the cockchaffer, stag beetles, and a few other varieties of the larger beetles. Those to be favourably mentioned here are of a dingy yellow colour, with a pale red head, and the yellow hue heightened towards the tail. The largest of this species is gained from the stag beetle, but is not very common: the next in size is that of the cockchaffer, which is found in great plenty in loamy soils, when turned up by the plough; and it is to prey on these that rooks are found to follow the plough tail so closely.

3161. *The cowdung bobs, or clap baits* of the angler, are the larvæ of the stercoracious beetles, which deposit their eggs under or within masses of either horse or cowdung. These are rather less than the earth-bob, or chaffer-grub, but resemble it in figure, though they are rather darker in colour, particularly about the head: as however they are the produce of several varieties of the Burying beetles, they somewhat differ in these respects. One of them, and we think the best bait of the tribe, is longer than the others, and is the produce of *Silpha Vespillo* of the entomologist. Its length is more than an inch; its body is also more pointed at each extremity than the other; and each of its rings is marked by an orange coloured bar across its middle.

3162. *The cabbage grub* is the larva of the *C. aurata*, the golden beetle of our gardens; and the larvæ of some of the *Scarabæi*, not very unlike them, being found in similar situations, it follows that there are two or three distinct varieties of cabbage grub. They are none of them large, but have the general properties of the *Scarabæi*. The cabbage grub is used in the same manner with other larvæ for roach, chub, dace, trout, and grayling, by placing two on a hook: if they are very soft, the hook should be armed with a bristle, to retain the grub thereon; scalding will however harden them sufficiently for the unbristled hook.

3163. *The meal worm* is a favourite bait with some fancy anglers for all those fish which take the gentles and other larvæ. It is even more sought after by bird fanciers, particularly for their nightingales, than by anglers. It is the larva of the darkling beetle, or *Tenebrio molitor*, with a dusky long body, which, running quickly about our outhouses, is a well known insect. Its egg (laid always near or among provisions, particularly of the grain kind), produces the meal worm, so called from being frequently found in flour mills and mealmen's warehouses. In figure these baits are not unlike an elongated gentle, of a yellowish white colour, and being often of an inch in length, one will fill up a No. 9. hook very respectably, but two are necessary for any size larger; and as they are rather hard in their coats, our practice has been when using two to double the second on the point of the hook. They are useful when gentles are not to be procured, and will then kill the same fish to which gentles are offered if used in the same manner. Dace seem mightily taken with them.

3164. *To preserve the various bobs and grubs for winter use*, nothing more is necessary than to place them with some of the earth in which they were taken in any vessel. Some put moss with them; whether this be added or not, they should be kept in a cool situation, but

free from frosts, and in this way they will gradually harden. Previous to their being used, should it be requisite to make them even more tough than they then appear, they may be immersed in scalding water a few minutes, which will have the desired effect.

3165. *In the angler's use of bobs*, or larvæ of various kinds, judgment must of course be exercised to adapt the size of the hook to that of the bait. The largest bob, or grub, will cover No. 5. hook; the next size may be placed on No. 6.; and the remainder on No. 7. It is always prudent to use a bristled hook, otherwise the internal parts of the grub will exude, and it will slip down the hook; but when a bristle is attached it stays the worm. If this method be not pursued, use two grubs, sliding one wholly up the hook, and then passing another three-fourths of its substance on the barbed portion. Occasionally the bob, or beetle larva, is used with a pair of wings, and is then drawn principally on the surface of the water, being allowed to dip now and then only a little below it: in this way it is roved with hither and thither successfully. These grubs are sometimes used at midwater as roving baits, and still more frequently they are employed in float angling. Our *North Country Angler*, the most indefatigable fish killer that ever wetted a line, by his own account at least (and there is no reason that we know of to doubt him), is not content with the destructive properties of the *bob*, which he considers an excellent bait, but he adds to it a small hackle-fly, which he hangs two feet above it. The believers in transmigration would say, that hereafter he will be seen dangling on the additional bait hook.

3166. *Father Walton* praises these baits for bream and carp. Mr. Best takes a wider field, and says they are choice baits from the beginning of November until the middle of April for chub, roach, dace, salmon, smelts, trout, bream, tench, and carp. We have angled with them, and have taken fish by their means; but as long as our gentles lasted, we never laid them aside to use bobs of any description. Mr. Salter's opinion coincides with our own, that they are not very killing: they appear to be in favour chiefly among country anglers in still waters, especially for perch. They are found in light mould, and under and about cabbages and potatoes; are very tough, and will live a long while among half-dried cowdung, or light mould.

3167. *Lepidopterous larvæ*, in popular language called *caterpillars*, are when hatched very small, but they grow rapidly, some of them to a very great size, like that of the garden tiger-moth. True caterpillars, as larvæ of this order are called, are distinguished by the number of their legs, *there never being less than eight, nor more than sixteen, in any variety of true caterpillar*. Such as have more always belong to some other order of insects. The three anterior pairs of feet which are affixed to the three first rings of the body are hard, scaly, and always of the same number. The hinder feet, on the contrary, are soft, and vary both in number and in figure. The body is composed of twelve segments; to the first the head is attached, and is hard and crustaceous. On each side of the body are nine spiracula, or breathing holes. The caterpillar experiences numerous changes or moultings, at each of which not only the skin, but the jaws, mouth, antennæ, palpi, and a portion of the head itself, are renewed also.

SUBJECT. 2. The Caterpillar as an Angling Bait.

3168. *The caterpillar* in angling is not only worthy of attention in itself as a dipping or daping bait, but also as a model for an artificial representative of very great importance to the fly-fisher, known in his vocabulary as a *palmer*. In olden times it was called a *palmer-worm*, after the caterpillar, which was, we presume, so designated from its roving or pilgrim-like disposition. It is however difficult to account for the present mode of dressing the palmer so short and round, as an image of the lengthened form of the true caterpillar. We are disposed to think that the palmer-fly, as it is called, was dressed as a type, not only of other small round hairy caterpillars, but also of some other larvæ, as the tenthrédines, and even the hairy or silken cocoons of some small moths, &c.; for in no wise does this particular formation of the artificial palmer typify the long caterpillars of the larger moths and butterflies. Thus in *Best's Art of Angling*, which is compiled from the older works, we read, "Palmer-fly, palmer-worm, woolbed or cankers, are found on herbs, plants, and trees, where they are bred, if not a perfect caterpillar, yet undoubtedly a species thereof; they gain the name of *woolbeds* from their outward parts being woolly: these and the May-fly are the foundation of fly angling."

3169. *The true caterpillars* are extremely varied and numerous: in our gardens we find a large supply, particularly on our *Brassicæ*, or cabbage tribe of vegetables. These are mostly the larvæ of species of the white butterfly (*Pieris*), viz. *P. Brassicæ*, *P. Rapæ*, and *P. Napi*; and we may observe that no caterpillars are better for dipping baits than these.

3170. *In putting caterpillars* on the hook some nicety is required; if it be roughly done, the soft contents of the caterpillar will escape. A bristled hook also is necessary, of No. 5, 6, or 7. according to circumstances, on which the caterpillar should be threaded, passing it up from the shoulders, leaving half an inch of the tail pendent: pass or thread another contrariwise, taking care to have the barb completely covered. Inspect the bait very frequently, and change it often. We have also daped successfully with a pair of brown wings on a hook No. 5., and with one caterpillar passed up the hook to meet the wings, where a retaining bristle dressed on the hook with them should be placed (see fig. 508.)

3171. *Neuropterous larvæ* are most of them carnivorous and are singularly agile, predaceous, and voracious. As being mostly aquatic, they are interesting to the angler; and although they do not stand conspicuously on his books as baits, they may be occasionally used as such in all their varieties, it being an unerring law in the creation, that those which prey on all around them are also preyed on by others; were it not so, their numbers would increase to an injurious extent.

3172. *The larva of the Libellula*, when burst from the egg, increases by time to half the size of a parent fly, changing its skin as it grows several times. Its head presents, like that of its parent, a curious contrivance in a kind of mask, which can be opened at pleasure, to enable its jaws to seize and devour its prey, which consists of small fishes and water insects in all their varieties. These larvæ move in the water by repeated jerks, caused by ejecting a stream of water from their own tails, which thus forces them forwards. It is to be observed however, that the water ejected has first served for respiration. They may be secured by a dexterous trawl with a landing net, but



they will not live long out of the water, and without doubt they might be used as baits with a reasonable prospect of success for any of the neighbouring fish; but the trouble of catching them would not be repaid by even an ordinary degree of sport.

SECT. V. *The History of the Caddis, and Larva of the Ephemera.*

3173. *These ephemeral larvæ* as angling baits do not require much of our notice, at least they have not been often employed in general practice, and still less frequently are they mentioned in the list of baits. We have ourselves tried them as a mere matter of experiment, after having for the purpose of observation extracted them from their holes in banks, &c., but when employed it was always with dubious success. Roach and dace we found would occasionally take them, and, if we remember aright, perch also; but they were never greedily accepted by either.

3174. *The larvæ of the Phryganeæ* are the caddies of the angler, and are produced from eggs deposited by the parent on the leaves of willows, alders, and other trees which hang over rivers or pools; and to those leaves they attach themselves by a viscous secretion until they are hatched, when falling into the water they become aquatic by means of organs already prepared to assimilate with such a state. The members of the genus are very numerous, but the different species present one common character in their mode of life, though they are diversified in size and in the precise structure of their habitation. Hatched from the ovum and falling into the water, the animal instantly sets about to counteract its defenceless state by building itself a dwelling, in which it thrives and grows to maturity, and attains, in the larger species, to an inch or an inch and a half in length, when it exhibits a long depressed form (*fig. 505.*), usually of different shades, the hinder part being the lightest; the colours, however, vary in the species, from brown to greenish and dirty yellow. The body is furnished with six legs, by which, when it has thrust them out of its case, it can draw itself about with facility in search of food. To fasten the case securely to the body, most of the species have a dorsal tubercle, which retains and keeps it from sliding away with the current. In these cases they remain some one, others two, and some three years, according to their species.

3175. *The process of forming the caddis case* appears to commence thus: the animal spins a silken lining, through the interstices of which it throws out an animal glue, serving as the mortar for cementing the masonry of this outer covering. In the selection of the materials of their residence, caddies, directed by an unerring instinct, evince not only much skill, but also apparent forethought. If they occupy rivulets or running brooks, they give solidity and weight to the structure of their dwellings. If their situation be in stagnant waters, the lighter materials of vegetable origin are used; and if, accidentally, the medium they inhabit becomes changed and forms a current, they attach to their frail and light dwelling a stone as an anchor. It may be observed, that the architectural processes of the caddis, or case-worm larva, are in direct opposition to the efforts of man, who commences his building from without by raising a superstructure according to his means, intended not only to afford himself comfort, but also to excite admiration in those around him. Our minute builder, on the contrary, commences his operations on the internal furniture of the mansion, and the limits of his walls are the lines of demarcation of his own person. In this adaptation all the species are agreed; but in the outline of the domicile, and the component materials of it, great diversities are manifest.

SUBSECT. 1. *The Caddies as Angling Baits.*

3176. *We have already noted* the flies produced from caddis-cases, as objects of the angler's consideration, and we now turn our attention to these grubs or larvæ; and as their varieties are important objects also of the angler's notice, we have already figured the leading member of them at p. 1006., observing that the larger varieties only, as might be supposed, are in general use for daping or dipping with, such as the *Phryganea grandis*, the caddis-fly (*P. bimaiculata*), the rhombic (*P. rhombica*), &c. &c. In their relative value as baits we know of no distinction among them. They succeed best in small and slow streams or ponds; the local circumstances of large, wide, and rapid rivers not being favourable to their evolutions; consequently they are seldom found in great numbers there; nor do they prove very successful baits in such situations. When they are tolerably plentiful in wide streams, they are only seen near the edges: in such waters they will kill fish, but best in the most quiet parts of them. As their food is partly vegetable and partly animal matter, such as minute insects and fish-spawn, so they are to be looked for when these are at hand, particularly in brooks, pools, and ponds. They are very often found adhering to aquatic plants; on the water-cress (*Nasturtium officinale*) they may generally be seen. The stone-fly we will again remark on as a very useful and very important fly to the angler, but he must avoid falling into a very gross error, easily induced by their appearance, which is to consider this and the May-fly as similar insects, and so to describe them, which is erroneous. Both the green drake and the grey drake are *Neuroptera*, and the same species, in the imperfect and perfect imago state. The tail appendages as seen in the May-fly, either in its larva state, its nymph state, and as a perfect May-fly, as this ephemera is called among fishermen, easily distinguish them.

3177. *The variations in the accounts* of the properties of caddies as baits are dependent on the nature of the waters they have been tried in. They have their localities as well as other animals, and are most readily

taken where they are themselves indigenous. In the Colne, the Lea, and the New River, they abound, and in the smaller streams of the midland counties not subjected to violent floods they swarm also. In meres and sheets of water, where there are reeds and other aquatic plants, they likewise exist in profusion: in such waters they will take fish, and consequently will obtain eulogists.

3178. *The piper caddis* is one of the largest, and is principally met with in northern and Welsh streams, where it is a favourite bait; but it is never found except where the bottoms are limestone or large pebbles. It is about an inch long, the case is straight, and rough from being covered with sand or gravel, and is apparently a small stick, of which the pith was decayed before the insect, in its state immediately succeeding its exclusion from the egg, lodged itself. Advanced to an aurelia, which is generally in April or beginning of May, it leaves its case and last covering, a sort of skin resembling a fish's bladder (which is the method of the whole genus), and immediately, with its many legs, paddles upon the top of the water. It seldom flies, although it has four wings, which in their infant state are short, but soon extend longer than the body. This is usually called the stone-fly, and in Wales the water-cricket, from its similitude to that insect."

3179. *To collect and preserve caddies*, turn up the stones, and the best will adhere to them: when the numbers wanted are obtained, put them into a linen bag for five or six days, dip them, together with the bag, into water once a day, and hang them up; they will then turn yellow, become tough, and fitter for angling than when first got from the brook: if meant to be kept long, they must be put into a thick woollen bag, with some of the moist gravel or sand from the same rivulet from which they were taken; they must be wetted twice a day, but oftener in very hot weather: when you carry them abroad fill the bag with water, and holding the mouth of it close, let the water run from them: under such treatment they have been kept three weeks.

3180. *Another mode of preserving them* is, by placing them in an earthen pot full of river water, with some of the gravel they were bred in at the bottom; but the preceding method is preferable. Some preserve them in their native water by means of bait-pans of different sizes. Place over the tops covers of wood, or linen; if of wood, let the tops be punched full of holes, but not so large as to admit of the insects escaping when placed in the river: this treatment not only keeps them cool, but supplies them with aliment in the fresh water. Others preserve them in moss in a woollen bag on a damp floor, taking care that the bag retains a proper moisture.

3181. *Mr. Salter*, whose authority as a southern bottom angler is most respectable, is not so favourable to these baits. He expresses himself thus: "cads, caddis," or straw case-worms, are hardly worth the trouble of getting, or preserving. The fly is the stone-fly; the green and grey drakes are similarly encased in pieces of rushes, dried stems of weeds, &c.!!" That so good a practical angler, and so excellent a practical writer as Mr. Salter, should have been so ignorant of the natural history of the *Ephemera*, as to class them with the cad-case tribes, from which they are as distinct as the bee from the fly, can only be accounted for by the unfortunate practice of taking whatever is written on trust. "These caddies," he continues, "look like maggots or grubs, of a yellowish colour, that are found in cases, or husks of wood and stones; and those encased in rushy or weedy husks are invariably green. Case-worms, rough coats, &c. were formerly used in angling for roach, dace, and chub; but in respect to their value as baits for fishing, compared with what the modern anglers use, they are hardly worth naming or describing, yet are extremely curious as a natural production." Afterwards he says, "In the New River, and some other small streams, I have found the roach take a cad freely in the month of April; and trout also will sometimes prefer it to a worm."

3182. *We may sum up these contradictory accounts* by adding the result of our own experience, which is, that in some small rivers with little run they will kill every kind of worm-taking fish at bottom. In large rapid streams, particularly such as run over limestone, they are but indifferent substitutes for gentles or worms. In the Trent they prove singularly attractive to fish, as well as in all the streams of a similar size, which flow through clay and gravel, around the metropolis. The regular caddis fishing commences in May, and continues until June: after which time however, other caddies continue to present themselves, but they are small.

3183. *The dock or flag-worm* of the angler, is a minute caddis of the larvæ of some varieties of the *Phryganea*. The investing case is made of the vegetable straws around, and sometimes a hollowed stem is found by a larva already made, and is immediately tenanted. The caddis itself is of a reddish yellow, and exhibits the same figure and properties as its larger congeners, the stone-fly, rhombica, &c. &c.

3184. *To the angler* these offer a bait of the same nature as the common caddis, but more minute and more accessible. They may be procured without the intervention of a groping-net, and by merely pulling up some of the flags around the still parts of a river, or any sedge pit or pool near it; for this variety can only be found in still quiet situations, and never ventures into the open water. By shaking the roots gently to free them from the soil, and then looking well into them, the cad-cases will be found adhering to their fibres. The inexperienced may not readily discover them, but by carefully examining every portion which appears tubular, and rather exceeds half an inch in length, they may be detected. If to be used immediately, pick them out dexterously with a pin; but if to be preserved for future use, proceed with them as previously directed. The early summer months are the best for employing these baits.

SUBJECT 2. *The Turnip Worm, Fish Grub, &c., as Baits.*

3185. *Of this bait*, found at the roots of many bulbous vegetables besides turnips, Captain Williamson gives the following accurate account, accurate at least as far only as regards its appearance and habits. For want of a due acquaintance with the natural history of insects, Capt. W. is led into the error, not of considering it as the true caterpillar, which some others have pronounced it to be, but into the more remarkable one of classing it with earth-worms. The general acumen of this gentleman makes this oversight a matter of surprise

3186. "*Turnip worms* are of a peculiar appearance, having greenish blue heads and cream coloured bodies. They are commonly found under large wide turnips, and under large potatoes; in both of which they make holes, and occasionally seem to nestle in the cavities occasioned by their own depredations. When first exposed to view, they generally curl themselves up into a ring, in which state they will often remain a long time, without making any effort to get away. They are about two inches and a half long, and rarely stretch themselves out like other worms. These are not very good baits; but when put into a pot with moist rotten dung, they improve a little, and may answer when more showy worms are not at hand."

3187. *Of the value of the larvæ of the wasp and bee tribes*, called wasp and bee grubs, we can say but little from our own experience. We have certainly fished with them, and as baits for slow deep waters they are valuable; but as brains are equally efficient as winter baits for chub, and pastes and gentles for other fish, and are more readily procured, we have adhered chiefly to them in our own practice. Whenever these grubs fall conveniently in the way of the fisher, we would however advise him to toast, and try them. Extended angling habits lead to a conviction in every practitioner of the art, that the more varied his baits are, the more he accommodates his fishings to different waters, different prey, and different times and seasons.

3188. *Mr. Daniel says*, "The young brood of wasps, bees, and humble bees, may be discovered by the going in and out of the old ones. By making *wet squibs* of gunpowder, and thrusting them late at night into the hole or place where the nest is, and setting them on fire, the old wasps or bees will be smothered, and the combs containing the young, covered with films, may be taken without danger of being stung. From the comb no more should be removed than are at any time wanted for present use. Some boil them, for immediate use, three or four minutes in milk, which will make them stick well on the hook; but if kept above three or four days after boiling, they will turn black." *Toasting* the cake is better.

3189. "*The young wasp, or bee grub*," Mr. Salter tells us, "is an excellent daping and tripping bait for trout: this maggot is much like the common gentle, but considerably larger: use a No. 8. hook, put a good bunch of them on at a time, and let them swim down the current, touching the bottom." We can vouch for this being good practice in Middlesex, Essex, and Hertfordshire; and also in the trout streams of Derbyshire.

3190. *The blow-flies (M. vomitoria)* deposit their eggs on animal matter either putrid or fresh. In a few hours the larvæ or gentles are hatched, and when full grown, which happens in eight or ten days, they are of a white or yellowish white colour, with a slight tinge of pale red, and of a lengthened shape, with a sharpened front in which the mouth is situated, and from whence the body gradually enlarges in size to the last or terminal segment, which is of a very broad and flattened form, surrounded by several slightly prominent teeth, and furnished with a pair of dusky specks resembling eyes, so that an inattentive spectator might easily mistake this part for the head, and the proper head for the tail. When this larva changes to a chrysalis, the skin dries round it, and the whole assumes a completely oval form and reddish colour, which soon changes into a reddish brown. In ten days more, the fly itself emerges.

SUBJECT. 3. *Gentles as Angling Baits.*

3191. *To the angler* the larvæ of the blow-flies are highly important; and it is somewhat singular that they are so, seeing that the animal from which such larva proceeds is not aquatic, and that under ordinary circumstances it is not likely that its larva should reach the water; for a carcass, if thrown into it, before it became fly-blown, would certainly never produce maggots there. It is even very questionable also, whether immature larvæ would attain perfection under water.

3192. *To procure or blow gentles*, nothing more is necessary than to expose any animal matter, such as a carcass or portion of one, either fresh or putrid, within the reach of blow-flies during the spring, summer, or autumn months, and the gentles will appear on it in a very few days. There is some fancy among anglers about what animal matter is to be chosen for the purpose; and as the larvæ certainly feed on it, so, *à priori*, we might suppose some kinds would prove more nutritious than others, and thus produce finer gentles. Under this view we are not certain that such is not the case: reasoning generally, it might be alleged that, as instinct is more unerring than reason, the parent animal would choose no situation that was not adequate to fulfil her intentions of rearing her young to maturity. There are other circumstances however, favourable to their full development or growth, which may somewhat influence our choice; the principal of these are moisture and seclusion. For this purpose we gash the liver which we hang up, that the fissures may remain moist, and afford a nestling place for the young larvæ. The head of an animal, as of a sheep, &c.; or the whole carcass of a smaller animal, as a fowl, is also good as offering protection and covering to retain interstitial moisture. From tallow chandlers and fellmongers gentles may be procured; and where the supply can be always secured, this is a ready and convenient market; but where they are not always to be had, it is better for the angler to use himself to *blow* his own gentles, as his stock is easily kept up, and disappointment certainly avoided.

3193. *To preserve gentles after they have been procured* is the next step, and here two or three obligations occur. The first is to prepare them for use; the next is to preserve the supply. To prepare them for use is nothing more than forcing from them some of their internal and external secretions, by which their coats become more dense, or, as the angler expresses it, more *tough*. This is first promoted by removing them from the breeding vessel into a more confined situation, with a mixture of sand and oatmeal or bran, either dry or moist, as it may be desirable to hasten or retard the process of pupation.

3194. *To prevent gentles from turning* is therefore, of course, nothing more than to retard the process of evolution; and this, from what has already appeared, is best effected by giving sufficient room to keep them cool, and thus prevent their hardening and drying.

As heat hastens their change more than any other agent, additional cold may be given by the choice of the situation they occupy; when, therefore, the angler takes gentles with him for several days' use, he should inclose them in a wide tin with wet sand, and give them every advantage of being kept as cool as possible, and if he can lower the vessel down a well, to within a few yards of the water, his end will be fully gained. Some of the gentles may be previously separated from the rest and placed in bran, or in oatmeal, for immediate use. When a pretty long expedition is meditated, as one of two or three weeks, the gentles selected should be of two sorts, some fully evolved, and others green, as it is termed, that is, hardly full grown: two days' keeping in bran in a warm situation is sufficient scouring for the former; to the latter a thin slice of beef or mutton, or a small fish, may be put, when in their moistened sand. The vessel in which they are kept should, of course, be placed in a cool but not in such an intensely cold situation as the well: as the gentles from this store become full and plump, they may be removed to the other for scouring. Gentles *succeed* the wasp-grub in autumn and early winter.

3195. *The different states of gentles* are found to be acceptable to different fish. It is said, and our own experience justifies the assertion, that barbel, chub, carp, and tench prefer them green or unripe, as being more full of flavour and more highly scented. With regard to barbel and chub, we are fully convinced that gentles are more relished in their early states; and we were so prepossessed with this opinion, that in our later fishings we purposely supplied ourselves with green gentles; but we confess we have been at a loss to discover any sharper avidity in carp and tench for these in preference to others. Roach, dace, and bream are evidently more partial to the scoured gentle. Mr. Daniel cautions sportsmen against throwing away their gentles when on the *turn* (which is known by their alteration of colour and loss of activity), for roach and dace, he observes, will frequently take a red and a white one that is turned and a fresh one together, in preference to any other bait: grayling always take more readily the largest and best-scoured gentles; and our experience convinces us, that it is impossible to be too particular with regard to their state, &c., as baits for these fish.

3196. *To preserve gentles through the winter months* is a very important consideration for the angler. In the neighbourhood of still and deep rivers his roach fishing depends principally on them; and in the bends and deeps of the more rapid rivers which afford grayling, he is equally indebted to them for his principal sport and his largest fish. In September or October, the later the better, so that the parent fly is yet abroad, which will much depend on the season (we have seen the flesh-fly active in the early part of November), allow either the carcass of a fowl or rabbit, a sheep's head, or a portion of liver, to be well blown. Procure a butter tub, or, in preference, a stout long elm box (our own was one foot wide, one foot and a half deep, and three feet long); into some such vessel put sifted mould moistened and mixed with dried and pulverised cowdung: horsedung, swines' dung, or poultry-house sweepings, are less eligible as being heating, and thus tending to push the evolutions more quickly.

3197. *With this mixture* half fill the box and very lightly press it down; put the carcass and the blown gentles together into it, strewing them over with some of the same compost; as the mass sinks fill it up with the same, and press it at last moderately as the gentles will find their way to the bottom. This box may then be placed in any outdoor cool situation, and the mould at times be slightly moistened; or it may be buried a foot or two in the earth, if convenient, and will then require no moistening. The advantages we derived from a long box were, that we could turn up the earth in it at one end to procure the gentles we wanted, without admitting air or disturbing the whole mass; and what was not of slight consequence, without being disgusted with the sight of the rotting carcass. It is of course some trouble to uncover the box when buried, but in this case the trouble is amply repaid by the cleanliness of the process, for the earth prevents any effluvia from annoying the angler in removing the gentles, and once a fortnight will be sufficient to effect this. During the early winter months fresh supplies may be added to these, as they can be obtained from the holes and corners of fellmongers' yards, the melting-houses of tallow chandlers, or the killing houses of the knackers in London, and collar makers, huntsmens' lodges, &c. in the country. Neither is all this trouble necessary but to the country sportsman, for the London anglers can usually supply themselves the year through with gentles from fishing-tackle shops, and also from the knackers or horse killers, where some of the finest may be procured, although a prejudice exists against them when thus obtained, which is fostered by the regular vendors, who affirm that they are only fit for ground bait. The idea is indeed *ground-less*, for when *duly prepared* these will be found for barbel singularly attractive, and for all other fish also they appear nearly if not quite equal with those procured from any other source. Of the value of gentles as a bait but one opinion we believe exists, or we should not have dwelt so long on them; neither are they a local bait merely. Through all the districts we have travelled they are highly prized for all winter-taking fish, roach, dace, and grayling especially.

3198. *We cannot pass the water-cricket* without some mention, although our faith in its virtues as a fish bait does not equal that of the *North Country Angler*. Remote from much intercourse with the world, and as we suppose in possession of an angling library rather less extensive than those of Messrs. Haglewood and Milner, the *North Country Angler* congratulates himself and his readers on his extraordinary *discovery of a new insect*, and his full experience of its remarkable angling virtues, both of which, however, had been fully treated of by Walton and Cotton nearly two hundred years ago. We mean not by this to disparage the writings of this author, or the merits of the bait: he might not be a profound naturalist, but we have no doubt that he could catch fish in competition with the profoundest philosopher, and could beat him too; and we ought therefore to be obliged to him for not withholding the *secrets of his craft* in a work which affords both information and amusement, though savouring a little too much of the poaching character. Yet we do beg leave to smile when he commences a chapter expressly dedicated to the history and virtues of the "Creeper, or Water-cricket," after the following manner:—"I am not so vain as to think that no other anglers have made such useful discoveries and improvements

in the art of angling as I have done; however, as I have not heard or read of any such, I shall, for the benefit of society, inform my reader how I came to know this bait, and how I fish with it." Mr. Daniel, who holds our author in high estimation, under the designation of an "Experienced Angler," but who unfortunately gives us his blunders as well as his excellences, thus echoes his further account of this newly-discovered creeper! Have any of our readers a remembrance of the caricature of *cracking a joke*—verbum sat? "The water-cricket or creeper, it is an error," says Mr. Daniel, "to suppose is the same as the cad-bait; for though generally found by the water-side, the latter is always in some kind of husk; the creeper never; nor ever has wings, and cannot, therefore, be the stone-fly: it may be kept in the same way as the caddis!" Stone-flies are, indeed, in particular waters, killing baits; but unfortunately, even where they are found in the greatest plenty, they do not continue longer than five weeks; but about the middle of May they take wing, and for a fortnight or three weeks, while their wings are growing, they may be taken, and by nipping off their long wings, may be fished with as the creeper. It is best to gather them fresh when going to use them immediately, although they may be kept two or three days in a vessel immersed in a shallow stream near the water's edge, where they are to be found; but in catching them the person must be nimble, as they conceal themselves very quickly in the sand or gravel, or under stones. Trout are observed to thrive much and come into colour during the season of the stone-fly.

3199. *Mr. Salter's opinion is very favourable to the stone-fly*: he says, "The stone fly, water-cricket, or creeper, while in the state or form of a maggot (we wish Mr. Salter had stated the grounds on which he also considered it a pupa) escapes from the husk or case before his wings are sufficiently grown, so as to enable him to fly, and creeps to the crevices of stones, in which places he may be found, and from which circumstance his name is derived. These insects are found in almost all trout streams or stony rivers, and are known by most anglers for trout as killing baits." Mr. Salter afterwards says, "Although the May-fly is certainly the most general killing fly, yet the stone-fly is found to be the best in some few places, more especially about Carshalton, and also in very stony small rivers: these flies are the best, either natural or artificial, and can be used until Midsummer in most waters." These entomological lapses do not, however, at all lessen the value of Mr. Salter's accounts of the killing properties of this bait.

SUBJECT. 4. *Living Baits from Fish, Frogs, &c.*

3200. *This account*, as far as regards fish, will be confined to such as are used as baits in their living state, and to such immediate uses only. The individual history of each, as well as the methods of employing them as dead baits, will appear in the articles appropriated to that head. Living fish baits are of course selected from those which predaceous fish are themselves known to prefer as their natural food. They are likewise chosen from such as are striking objects altogether, and attract by a display of their brilliant colours or variegations, or, as the angler would say, show themselves well in the water. The ease with which they can be obtained also influences their adoption or rejection: it is thus that minnows, gudgeons, roach, and dace are favourite baits with the angler, as they unite in various degrees these qualities. It is supposed, in consequence of the armature of some fish, as the dorsal spines of the stickleback, the sharp opercle of the bullhead, and the fine points of the perch's back fin, that these fish are less readily taken, either as baits or prey, than the others. But as hunger breaks down stone walls, so it blunts these spinous processes in the apprehension of the fish which devour them. It must however be allowed, that whether it arise from these or other circumstances, the spine-furnished tribes do not seem to be sought after with such avidity as those that are spineless. To remedy this, anglers cut off the offensive spines; and with many the practice is thought to succeed in removing all fear of them from enemies; but whether under these mutilations the wary fish may not be in dread of the armature, nothing but a long course of observation will show. Carp and tench, it may be observed, are known to be less frequently sought after by predaceous fish than many others, and yet they are unarmed, which gives us reason to believe that the others owe their degree of security more to their not suiting the taste of the predaceous fish than to any fear of taking them. There is not one of these fish just enumerated that we have not detected in the stomach of pike; but for one so found ten of other kinds have been met with. We regard it however as an error, to suppose that pike will *never* devour tench; but we think it not unlikely that these fish are less to their taste than any others of the cyprinus genus; for we do not remember more than one or two instances of the remains of tench being found in a pike's maw. Perch fry are devoured by them occasionally without mercy; and those of four or five ounces are not safe when other fish are scarce.

3201. *The size of living baits* is, after the *quality*, the next important matter for consideration. A large bait is certainly the most alluring, to pike particularly; but in a dexterous hand small baits will kill most fish. It is less the size of the fish than the capacity of jaw that is to be considered, in their avidity for quantity; thus a jack of five pounds only can pouch a roach of half a pound, when a perch of the same size could hardly swallow one of two ounces. Perch always prefer small baits, and are dainty respecting their condition also. Trout are able to take one much larger, we think, than a perch; and we recollect a trout of two pounds only, at Uxbridge, gorging a very large gudgeon, with which a friend was roving for jack. The use of live baits in general requires a float; when they are used without a float they certainly insure more exercise, but they also require more skill and attention in conducting the process. Perch are very frequently taken with a live bait, particularly by a minnow: trout are not so often taken in that way.

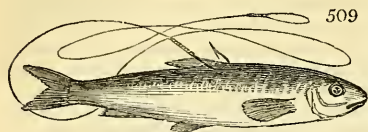
3202. *Live baits to be successful should be suited to the place fished in.* It would be unsportsman-like to offer fish baits not natural to the water. A shrimp in Dagenham Reach would be a tempting bait to a perch, but in Wittlesea Mere it is more than probable it would be refused; and the small frog which might take fish in this place would not be so well relished at Blackwall Docks. Pike in pools will take dace and trout, but none other of the predaceous fish would touch an unnatural bait. Live baits are seldom well taken at the bottom of any deep waters, but particularly of still ones. In deep streams with much motion they may be sunk lower, and kept down by means of lead. The tendency to rise to the surface is the greatest inconvenience in live bait angling. In very shallow waters live baits are altogether inadmissible; but a *dead* minnow may be spun in the shallowest water if it be sharp, or it may be dropped in on a gorge-hook even with a chance of success, such advantage has the dead over the living bait. For live bait fishing deep waters are preferable, the bait being sunk two-thirds only of its depth if there be motion in the water, or half way if it be still. In cold stormy weather fish retire to the bottom of the deeps, and then a living bait sunk to their own level is sometimes taken at once: but even in such cases, to insure success, keep the live bait in a gentle tremulous motion, and occasionally draw it quickly up a little, which stimulates the fish to take it, as fearing it will be lost to them. Weeds are very unfavourable to live bait fishing, and we always avoided the situations in which they abounded if we could: nevertheless, we have fished on broads where only living baits were acceptable, either for jack or perch, which broads were weedy. In these cases we always fished without a float, and kept a light hand on our bait, restraining it as it approached either the surface or the weed-bed. A quantity of very fine shot should be strung on the line near the bait in these cases, to keep it down; the minuteness of the shots will prevent them from doing so much injury as would be caused by the rising of the fish to the surface.

3203. *Live fish baits*, of every kind, should answer to their name by being truly lively. Much more depends on this than is imagined, as will be apparent on a proper consideration of the matter. When river baits, particularly those caught in sharp streams, are taken to troll with in large stagnant waters, although similar fish may abound there, and be the daily food of the jack, yet the river baits are immediately taken, and with an eagerness which shows that fish, like ourselves, instantly see the difference between the well seasoned and the ill seasoned of their fellows. This nicety is well known to trollers who frequent meres and broads, and they therefore always endeavour to supply themselves with river baits at much trouble, although the same species may be procured on the spot. If possible, therefore, let your live baits be got from the clearest and quickest streams and seowers; and if it be so necessary to success, that the baits should be of the most active and vigorous kind, it is equally requisite to preserve them so after they are taken, by keeping them cool and undisturbed; and it is particularly necessary that the water they are kept in be frequently renewed. Never remove them from the fish-kettle until the moment they are wanted, and then do not do it by the hand, but rather by a drainer-net, or ladle, as already directed (p. 989.). When fish baits are to be kept alive for an indefinite period, so as always to be at hand, a trunk should be sunk in their native waters. If this be not practicable, they should at least be put into a large tub or tank of river water. Pump or well water soon destroys them. Of the methods of procuring fish for baits we have already given some account in treating of angling apparatus. It may be added here, that the readiest way is by a casting-net, the next by a hoop-net let down in the run of the bait-fish, and small red worms tied over various parts of it will draw the fish together, when a sudden raising of it may entrap them. The last method is to angle for them, for which purpose it is always prudent to be furnished with a well assorted line or two. The stickleback is sometimes used instead of the minnow, and in some cases effectively.

3204. *The minnow as a live bait* (fig. 509. p. 1018.) is too well known to need an eulogium. It is less used in this state, however, for salmon and trout than for perch, and occasionally for chub. In roving for small jack and the largest perch, a lively minnow is a killing bait, affording also pleasant diversion; and for the chub, with a well-shotted line, we have successfully practised a sort of live bait sinking and drawing in deeps. Used with a float the minnow is also a good bait for *jack* in broad waters, which, although not very deep, yet, if there be a mild stream running through the centre, offer much chance of success. In such waters the smaller jacks haunt the sides from fear of the *pike* that inhabit the fastnesses, and here a minnow is such a treat to them that they cannot refuse it if it show itself well. As a living bait the minnow shines most, however, in perch fishing. On a paternoster line it shows itself with attraction: occasionally it also decks the night line, but we think it is here less valuable, as it seldom lives long enough to show to advantage.

3205. *Minnow roving* is practised as a general way for the capture of trout, perch, chub, &c. If it be done without a float, put a few shot about nine or ten inches above the hook, to keep the bait-fish down. The hook itself may enter the root of the back fin, by which sufficient hold may be gained without injury to the fish: we prefer this method to that

sometimes practised of passing it through one of its lips, and still much more to that of including both lips, as recommended by Mr. Salter, which must unnecessarily harass and weaken the fish, by making it more difficult to



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take in water for the supply of the gills. To a single lip-hold there is less objection, and a sufficient portion may be taken, both to secure the fish and not materially to injure the bait. In this way the minnow should be dropped in here and there, wherever there may be a likely spot for sport, and which, of course, will vary somewhat

according to the habits of individual fish. If our efforts were particularly directed to perch, we would choose deep holes, mill-pools, locks of canals, the sides of bridges, &c. &c. For chub, which will likewise frequently take the minnow with eagerness, it would be well to try shady holes under overhanging banks and boughs. In search of salmon try the boldest deeps; and for trout, drop the minnow into eddies and whirling pools, or the tail of a bed of weeds, &c.

3206. *In roving*, either with minnow, bleak, or gudgeon, it will be well to consider the probable size of the fish around the angler before mounting the bait. If salmon are likely to be guests, or even large trout be nigh, the gut used should either be twisted, or else it should be very strong in itself. In regular salmon roving, fine gimp is often employed; but in our opinion well twisted gut is sufficient for any other fish than jack, and it will even secure them if they are under three or four pounds. We however would recommend, that when circumstances occur to prove that either salmon or well sized jack are at hand, a gudgeon, or other sizeable fish, should be substituted for the minnow, and be harnessed accordingly, still bearing in mind a very general rule in this kind of angling, that the finer the tackle, consistent with the size of the fish, the greater the chance of success.

3207. *A live minnow in float-angling* is less common as a general bait, though sufficiently so as a particular one, when intended for either perch or jack. There is, however, this difference, that if perch be the intended prey, strong single gut is sufficient, unless the perch run very large indeed, when and when only it may be proper to use twisted gut, particularly if there be any chance of a salmon taking the bait. When jack are the objects sought after, unless they are very small, the minnow must be hooked to fine gimp, and the hook employed on this occasion should be strong, but not large. The float must be a cork one, and of sufficient size and buoyancy to sustain the minnow, and the line must be so leaded as to keep the bait from rising to the surface. The depth to which the bait should be sunk must of course depend on the nature of the water, and the fish which inhabit it: for general cases, the usual direction is to sink it to mid-water; but as this in very deep pools would be too great a proportion, four or five feet may be properly considered as a fair ratio of depth. If, in stormy weather, it be wished to sink it much lower for perch, it is but to run the float up the line, and rove with the bait without it.

3208. *In fishing with living minnows* it is to be observed, that it is not the largest that are the best baits; and let it be observed, that when they are very full of spawn they are not eligible, for they are then soon spent, and the least exertion in casting them to any distance bursts them. Choose a middle-sized one, with a silvery belly, but avoid those which are yellow or dull in colour. Trout, in particular, are extremely nice in this respect: perch, though less so, yet will be best tempted by the most perfect bait. In this angling, let the minnow fall lightly from the hand, and when it is to be cast to any distance, let it be first gently swung with a free line, to gain an impetus, and it may then be rather delivered than cast, without disturbance to the water or injury to the bait. In very wide waters, live minnow roving is ineligible, however; and it will be found here more convenient, and far more successful, to use it as a dead bait, and in what way we shall notice when treating of dead baits.

3209. *If a trout should take the bait* while thus roving, which will be known by the sudden rush of the fish, and the violence of its mode of seizure, give a second or two of leisure to the trout to turn the bait, as the smallest opposition might alarm, or any sudden check might make him feel the hook, in which cases he would instantly abandon it. The perch takes with somewhat less violence, and an experienced angler readily distinguishes between the modes of doing it by these different fish, independent of the situation and nature of the water, which will commonly assist the judgment in this particular. It is necessary to let the perch have even more law than the trout to swallow the bait, which he will not do until he has roved with it a little; therefore two, three, or four seconds should elapse, or the angler should wait until the perch has carried it away two or three yards, when he may be struck with a moderate effort. The jack will require still more time ere he be struck: his seizure will be rapid and violent, like the trout; but it is his usual course to run directly off to a distance with the bait, and the spot he issues from, as well as the direction he takes, will usually enable the angler to judge of the enemy he has to deal with, who must then be managed in the way directed under jack trolling.

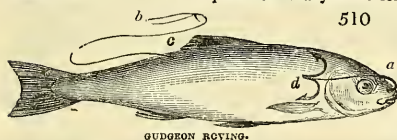
3210. *In this kind of fishing*, a rod of sufficient length and strength is requisite, with running tackle, as a matter of course. We always used for this purpose one of very stout bamboo, which was sixteen feet and a half long. Many use one of eighteen or nineteen feet. It is however evident, that this must depend greatly on the nature and extent of the water, and still more on the kind of fish inhabiting it. A light rod in a good hand will kill heavy fish; and the convenience and comfort of carrying and working with such a one, contrasted with the weight and toil of one more clumsy, will make a slight risk of little consequence to him who fishes perhaps for weeks together. The loach, or loche, is now and then used in the same manner as the minnow, but it is principally employed on night lines for eels, and for trout also. In these respects it is to be preferred to the minnow, as it is hardy, and lives longer: for all other purposes of a live bait it is, however, greatly inferior.

3211. *Lampreys*, when small, form excellent baits for trout and eels; they must also, to be in place, be used on a paternoster line, or otherwise, on proper eel hooks, and laid as night lines. When cut into pieces also, the larger sorts furnish very excellent baits for eel or night lines. Lampreys for baits, we may inform the London angler, may be bought about Hungerford Market of the Thames fishermen, particularly at the Spotted Dog in Strand-lane. The blind lamprey, or *Myxine*, which is about the size of a lob-worm, is sometimes used for the same purposes and in the same manner with the former; and its diminutive size renders it in some cases convenient for live bait trolling at the bottom of sharp streams, and in this way they have with us proved as successful in taking trout as any other method.

3212. *The gudgeon* is a valuable live bait, probably the most so in all the list of living fish baits. It lives longer in the water, and preserves itself better than any other fish; and, what is of consequence, it is less inclined to rise to the surface than either roach, dace, or bleak. As a dead bait we shall have more to say on its qualities. The London angler can usually purchase live minnows and gudgeons in Crooked-lane, and at Turpin's fishing-tackle shop, close to Sadler's Wells, and likewise at Cheek's, tackle-maker, 132, Oxford-street, and at Little's, 15, Fetter-lane.

3213. *Live bait fishing with gudgeon* is practised by roving with or without a float, or otherwise by stationary float fishing. In these separate methods the principles and practice employed are nearly the same as with the minnow, except that it is necessary to use stronger tackle. If either pike or salmon are at hand, a hook (No. 4.) should be armed with gimp: more lead also will be necessary to sink the fish, and a larger float must necessarily be required to suspend both. It will indeed be prudent, on the supposition that heavy fish of these kinds are at hand, altogether to prepare the tackle in the manner detailed in treating of live bait angling for jack.

3214. *Another mode of live bait gudgeon roving* is practised by some anglers with a double or treble hook. The double hook is to be procured ready-made for the occasion, or two hooks may be firmly whipped



together back to back, and then attached either to a link of twisted gut, or in preference to about ten inches of fine gimp looped (*a*, *fig.* 510.). It will be seen that a third hook is attached to this harness or trace (*b*); but which, however, is not necessarily a part of the apparatus, it being more commonly dispensed with. Having looped the gimp to the baiting-needle, introduce it under the skin a little beyond the gills, and carefully avoid injuring the flesh; guide the needle along the under surface of the skin, but rather upwards, so as to bring it out at the root of the farther end of the back fin (*c*). Draw the gimp or gut through the opening which will fix the hook as at *d*.

3215. *An improvement on this plan may be thus introduced.* It is found that in the use of these armed hooks, the skin is apt to be torn down by repeated castings out, which has been attempted to be remedied by attaching a short shanked hook (No. 9.), by means of a piece of gut with the whipping on of the gimp (see harness at *b*, *fig.* 510.); or, if preferred, this small hook may be attached by means of a loop slipped over the gimp. The use of this additional apparatus is to relieve the stress on the skin of the sides, by dividing the pressure; to which end introduce this hook into some part of the head of the fish, as at *a*.

3216. *It is directed by Mr. Salter to be passed through its under lip;* but we object to all interference with the mouth or gills of live baits, as they become much sooner drowned. It is a better practice to pass it over the head, and to fasten it into one of the nostrils. Where the angler is dexterous at tying, &c. we would recommend him, in forming this harness, rather to use two hooks back to back, of his own whipping, than a double hook ready made, unless it be on one shank. If he make it himself, he may let the shank of one be shortened a quarter of an inch, which, after the whipping, will then form a finer penetrating end, and will consequently lie less bulging under the skin.

3217. *It may also be well to recall the attention of the angler to the feelings of the bait-fish.* We would not affect any morbid sensibilities: we are aware that no animal sporting can be pursued without inflicting some pain, and without some appearance of cruelty; but if we are to be so convicted, let it be of the minor offence. In the ardour of the pursuit of sport we have used this mode of live bait fishing, but it savoured so strongly of impalement, that we never relished it, and at length abandoned it wholly. It certainly secures the fish more perfectly than by hooking it by the back fin merely: it also allows much more liberty and extent of roving, and is altogether perhaps the most killing method: but,

when against this advantage is objected the mutual injury to the feelings of both the fisher and the fish, we think the balance will be in favour of the more simple mode.

3218. *The bleak* is much less valuable than the gudgeon as a live bait, it being not at all hardy; but it shows well in the water while it does last. Like roach and dace, when used with a float, it is not without difficulty kept from rising to the surface, and it is unusual for a hungry fish to follow it thither and to take it there.

3219. *Roach and dace are excellent baits*, but are much better as such when dead than living; however, in extensive waters, and where pike are to be found, a roach or dace of half a pound weight makes a showy and tempting lure. They are, as noted, difficult to keep below the surface of the water without a well-shotted line, which in roving is inconvenient: it is therefore better to use a float. In placing dace or roach on the hook, do it by the back fin: we have seen them fixed by the tail, which practice is injudicious, as it tends to drown the fish by drawing them contrary to their natural way of receiving water. For snap-fishing, roach and dace are good baits, and they are so for jack as well as pike, since jack will, from voracity, seize a bait he cannot swallow, and with snap-tackle the very attempt is fatal. Handle either roach, dace, or bleak, tenderly, for in arming the hook with them their scales will rub off, and they will then look diseased and unsightly to the fish for which they are intended.

3220. *The perch as a live bait* is objected to by anglers, but we believe without much foundation. As regards small perch we are certain it is so, for we have repeatedly found their remains within predaceous fish. In the Grand Junction Canal, as it runs through Hertfordshire and Buckinghamshire, nothing is more common than to find perch of two, three, and four ounces in the stomach of a jack. This fish, it is well known, mauls his prey, first seizing it across the body, and with one fatal gripe destroying any resistance: he then turns it, and leisurely swallows it head foremost. In this act the rays of the dorsal fin become compressed close to the back, and the spines, which bound its extremity, of course no longer present any thing offensive.

3221. *Large perch are without doubt dangerous prey to jack.* Mr. Salter informs us that he has seen a jack choked by the spines of a perch which stuck in his mouth; but we learn that the perch was large in proportion to the jack. This agrees both with our theory and our experience, for after a perch has attained to half a pound it is probably in little danger from a jack. Small perch, we know, are greedily devoured by jack; and it is well known, as many an angler can testify, that they make, particularly in extensive still waters, as meres, broads, and lakes, attractive baits.

3222. *The spines may be cut off to ease the fears of the angler.* We have tried them both with and without this mutilation, and have found no difference between them. When however the whole fin has been nearly cut away, as we have seen it done, we have then observed that not only did the bait swim awkwardly, and become sooner enfeebled, but that the jack themselves were less disposed to take it. A perch of one or two ounces will be found a useful roving or float bait, particularly in some waters; such we deem it, from our own experience, formed on a long acquaintance and extensive use of it, the result of which was that we never selected it purposely as a live bait, though we never failed to kill with it; but as a dead bait we have some prepossession in favour of it, our reasons for which we shall state when we treat on *Dead Baits*, p. 1022.

3223. *Small grayling and salmon-fry*, in large rivers, are both used occasionally as live baits for salmon and trout, but more frequently they are employed in trolling for them as dead baits.

3224. *Small jacks* are used for live bait both with float and without, and their unnatural parents swallow them up with as much avidity as if they were aliens the most remote. The difficulty of procuring them, however, in sufficient numbers, is a hindrance to their being often employed.

3225. *Frogs were formerly much used as fish baits*, and Father Walton has fallen into unmerited odium by unguarded expressions concerning them. We condemn any wanton infliction of pain, but we are disposed to think that frogs have not more but less sensitiveness than many other baits. We believe that a hook stuck through the back fin of a fish, gives rather more pain than that which penetrates a small portion of the loose skin of the back of the frog, or the thin web between its toes. Frogs, as long as they continue small, still remain with some anglers a favourite bait for large perch, particularly in extensive marshy waters, as broads, meres, &c. In Dagenham Breach they prove at times successful baits for both perch and jack, and for chub occasionally in other waters. Half-grown frogs, or even those that are full-grown, are employed as living baits in roving or float angling for jack and pike in wide waters: and in all cases it is observed, that the bright yellow variety best suits the fancy of every one of the frog-taking fish.

3226. *In angling with frogs as live baits*, it is necessary to recollect that they must be allowed to come to the surface to respire, or they will be injured. It is erroneous to suppose, because we see them so often under water, that they are capable of remaining there continually: on the contrary, being only amphibious, they seek the open air at intervals, like others of that class. Although there is reason to suppose, that under the pressure of circumstances they can remain long submerged without absolute suffocation, yet it is not natural, and it weakens them. During the winter months they are thought to seek the bottoms of ponds, and become torpid; but in this state they have compensating faculties to enable them to support life during the long interval of exemption from ordinary breathing.

3227. *In arming a hook with a frog*, some begin by piercing the web of the foot, some the skin of the thigh, others the back; and it is again recommended to do it by the lip. We believe it to be immaterial to what part the hook it be attached; but the skin of the back is certainly that which enables it to show itself to the best advantage in the water. Captain Williamson says, "They should be hooked through the back muscle of the hind leg, tying up that limb so as to conceal the hook a little; or you may pass the hook through the skin of the back. It will require a good weight of shot on your line to keep the frog down; but he should be brought up now and then for air, or you may keep him chiefly on the surface. In many places, especially among broad dock-leaves, &c. where the jacks lie with their noses often out of the water, and are ready to receive whatever offers (for in this manner they catch many moorhens), it is best to let your frog be on the surface."

3228. *The water-newts (Lacertæ)* are by no means in common use as baits. We are not sure that we ever either heard or read of their being so employed; and yet both the varieties will occasionally be taken by all those fish which take the frog. They appear to succeed only as a bait in stagnant waters, as far as our experience goes, and then are by no means a killing one; but as a water-newt is often more easily obtained than a frog, it may sometimes become an acquisition when other baits are not to be had.

3229. *The water-newt, eft, or effet*, is familiar to every person living in the country, as it may be found in almost every stagnant pool throughout the kingdom, yet its natural history is in general but little known. The angler passes it by also, because he is not aware that he can reap any benefit from it; but probably if we develop a portion of its physical history, a little more attention may be drawn towards this animal.

3230. *The larger or warted water-newt (L. Palustris)* is much less frequently met with than the smaller or common variety. It may however be found in the stagnant pools of Hertfordshire, Buckinghamshire, and in others of the midland counties.

6231. "*It is*," says Dr. Shaw, "*when full grown*, from about five and a half to six inches in length, and sometimes rather more: its colour on the upper parts is an extremely dark or blackish brown, the sides being marked with numerous small scattered whitish specks or granulations; the under parts are of a bright orange colour, variegated with numerous large irregular spots or patches of deep black; the tail is of a flattened form, with thin or sharp edges, and with an acute termination on each side the tail; in the male is a silvery white, broad band or stripe, accompanied by a bluish tinge—this lateral tail-stripe, as well as the dorsal crest or process, is generally far less conspicuous, and is even sometimes entirely wanting in the female: the eyes are of a bright gold colour, the head rather small than large, the limbs short, the fore-feet divided into four, and the hinder into five toes, all of which are destitute of claws. This animal is by no means an infrequent inhabitant of the clearer and colder kinds of stagnant waters, and is also occasionally met with in damp and shady situations, under trees, hedges, &c. &c.: it lives principally on insects, and though it is an innoxious species, and perfectly incapable of injuring any of the larger animals, yet it appears from the experiments of Laurenti, that the natural exudation, or secreted moisture, of its skin is fatal, like that of the salamander, to the small varieties of the *Lacerta agilis*, several of which on biting this animal soon became paralytic on the fore-legs, were seized with a general weakness, and died without any convulsive motions."

3232. *The common water-newt (L. aquatica)* is much smaller, and is that which most frequently falls under the angler's observation: its general length is three inches and a half. "The male," says the same eminent naturalist already quoted, "is distinguishable at first sight from the female by its conspicuous dorsal crest or process, which is broader in proportion, more strongly elevated, and more regularly sinuated than that of the preceding species: the sinuations are continued to the very tip of the tail on the upper part, and likewise take place in a similar proportion on the under part as far as the junction of the tail with the abdomen, whereas in the former species the upper part alone of the tail can properly be said to be crested. This wide process, or sinuated part, is remarkably transparent; and when viewed with a lens, of even moderately magnifying power, exhibits very distinctly the ramifications of the bloodvessels dispersed through it; but if examined by the microscope is, perhaps of all other objects that can be selected for that purpose, the most eligible for exhibiting a general view of the circulation; for it shows in the most distinct and beautiful manner the rapid current of the blood, the particles of which in this animal, as well as in the rest of the *Amphibia*, are of an oval form, not round as in the *Mammalia*."

3233. "*In the greater water-newt* on the contrary, this part being nearly opaque, can by no means advantageously exhibit the same phenomenon. The female is almost destitute of the dorsal crest, but the tail is furnished with an approach to it, though far less conspicuous than in the male. The general colour of the male is olive brown, beautifully and distinctly marked with numerous round black spots dispersed over every part of the animal, but largest and most conspicuous on the sides and tail: the abdomen is orange coloured, the black spots often appearing rather less intense on that part than on the back."

3234. *The female differs very considerably in colour*, being generally of a pale yellowish brown, much less distinctly spotted, and from the want of the dorsal crest might be almost mistaken for a different species by a person not conversant with the history of the animal: on the top of the head, in both sexes, are three or four longitudinal dusky streaks, the eyes are small and gold coloured, the fore-feet *tetradactylous*, the hind *pentadactylous*. They are remarkable for a high degree of reproductive power, and have been known to exhibit the

restoration of their legs, tails, and even, according to Dr. Blumenbach, of the eyes themselves, after having been deprived of them by cutting.

3235. *As angling baits*, it is not difficult to get the newts from the bottom of small stagnant pools by a sudden trawl of a fine rake, which gathering the mud, weeds, &c. brings those *Lacertæ* with them; or they may be taken by a landing net of the kind described (fig. 491. p. 984.). When used as living baits, they should be hooked by the fleshy dorsal ridge, and in this way, being occasionally allowed to come to the surface to respire, they will live a considerable time as a float bait; or they may be used as roving baits: they might also be trolled with as dead baits with a small gorge-hook, in which way they are frequently taken by jack in ponds.

SECT. VI. *Inanimate Fish Baits.*

3236. *Dead baits used in fishing* are almost if not quite as numerous as those that are animate. Full as our list of living baits has been, it can be equalled by dead baits, as they may be properly called, and not improperly arranged under these heads,—vegetable substances, animal productions, and imitative matters or substances. Of vegetable baits we present them with grain of various kinds and under various forms, as whole kernels, ground pastes, and mixtures: almost every one of the *Farinacea* enters our list, and vegetable pastes are varied by us without end. Our animal baits, not at the moment of presentation in a living state, are formed from almost all that has lived under some disguise or other. Of imitative matters, very extensive is the angler's list; and were he indeed punished for "taking the likeness of every matter which has lived," sad indeed would be his prospect.

SUBJECT. 1. *Vegetable Matters as Baits.*

3237. *It was formerly much the custom* to use fruits, seeds, and grains of various kinds in the catching of fish; and in some continental countries the custom still prevails, particularly in taking the varieties of the carp genus. In England also they were formerly fished for with berries of different kinds, particularly with blackberries, &c.; and they are still occasionally so used. To this day, likewise, angling authorities recommend cherries for chub and carp; and although more tempting baits are now known, yet there is little doubt that these and many other ripe and sweet fruits of a conspicuous colour will entice such fish at times as are more particularly attached to vegetable food. Bream, likewise, have been so taken: seeds of different plants, particularly of the aquatic kinds, have been tried with some effect; and green peas are yet a favourite bait for carp at morning dawn.

3238. *Grain has not yet lost its character with some anglers*, who use soaked barley, wheat, rice, &c., by selecting one, two, or more of the finest of the grains to put on the hook, particularly for carp fishing. It is alleged by some, that the fish mistake these for gentles or other grubs; but we apprehend it is their disposition to take farina for itself, which influences them on these occasions, and that it is no mistake of these wily tribes, therefore this bait is yet used. Beans too have, in former days, been baked for the purpose, and barley, boiled in milk and dipped in honey, that, we suppose, they might please the "sweet tooth" of these gentry! We learn also, that to increase the appetites of the capricious carp, it has been even advised previously to soak some of the beans in a solution of aloes, and then lay them as a ground bait over night in their way, presuming that after a good scouring they might the next morning be more ready to take any bait offered them. We leave this preparatory recipe or *whet* where we found it, and proceed. Barley also and wheat-bait, it is said, are in common use in some rivers of the midland counties, as in the Trent, Humber, &c., and are prepared, particularly wheat, by choosing it undried, or such as from damp is become swollen and going to burst: it is to be slowly soaked in water by the heat of a half-cooked oven, or any other means which will continue the mixture of wheat and water in a moderate but not boiling heat for two or three hours: when cold it will form a stiff jelly-like mass, in which the grains of wheat will appear suspended, but sufficiently distinct to bear separating. It is with these grains, picked carefully out whole and put on the hook in the same manner as gentles, that the wheat-bait practice is pursued principally for roach. We venture, however, to pronounce, that as a bait it is greatly inferior to either gentles or paste: pearl barley parboiled is recommended likewise as a good bait for the roach and dace of ponds.

3239. *Pastes* are sometimes made of vegetable, and some are composed of animal substances, both of which we shall describe with ground baits.

SUBJECT. 2. *Dead Baits from Animals and Animal Substances.*

3240. *These are varied almost to infinitude*, and we shall here enumerate those only which are most usually employed: others will be mentioned in our angling directions for individual fish. *Greaves* form a most tempting bait for barbel and chub, and also for eels. To prepare them, break a sufficient quantity, over which first pour some cold water and let it

stand by all night; on the next morning pour off the cold water, and in lieu of it pour some warm, but not very hot water; after this has stood an hour or two, the parts of the greaves will separate, from which choose as baits the largest, whitest, and most connected pieces, which cover up with leaves or wrap in a moist cloth for use. When fishing, hang one, two, or three of the whitest of these pieces on the hook, concealing the point.

3241. *Brains and spinal marrow* are excellent and favourite baits with the London anglers principally for chub, though roach and bream will take them. The *pith*, as the spinal marrow is called, from the back bone of the ox is to be carefully drawn out, and the outer skin being taken off, is to be cut into appropriate morsels of the size of a nut, one of which is to form a complete covering round the hook, carefully concealing the point. The use of the brains is as an animal ground bait to attract the fish together, and to give them a relish for this kind of food: the pith being more solid shows better in the water, and is better retained on the hook than the brains, and therefore forms the best hook bait in this kind of fishing: the brains are by some strong stomached anglers taken raw into the mouth and then *blown* or spit out into the water; but a more cleanly practice, and one equally effective, as far as our experience goes, is to mix a quantity of them, carefully separated from the investing membranes, with pollard and a little sand; these when worked together become tolerably adhesive, and should be occasionally thrown in as a ground bait. This is justly considered as one of the most killing modes of winter fishing for chub, and it certainly proves to be such invariably in our southern rivers.

3242. *A clerical friend of the writer* is very partial to a snap-bait, consisting of the fat of bacon cut into the shape of a small fish, and decorated with a system of snap-hooks. With this he takes many pike, especially in the winter months, when bait-fish are difficult to procure. This bait he uses successfully in the Witham, a Lincolnshire river.

3243. *The various fish we have lately described as live baits* are all of them employed with some effect as dead ones. The stickleback, with its spines removed, may be used as a spinning bait for trout, or on a minute gorge-hook is roved or trolled with for perch, and is occasionally taken by a chub, or small jack: also the minnow, as a dead bait, is used in the capture of salmon, trout, and perch; it will also take chub and jack. As a general bait, therefore, we shall here consider a few of the methods in which it is employed, reserving others to be described with salmon and trout anglings. As a spinning bait the minnow is very successful, and indeed is the most universal in its application of any of the living ones, and with the gudgeon forms the most effective and attractive among the live baits of the angler. A concise but correct description of minnow spinning, and an accompanying cut of the tackle used, may be seen in a little book, price 2s., which also contains many other embellishments and much instruction, on the manufacture and use of the various tackle employed in angling. We thus notice this little work for its intrinsic merits, and also because the name of the writer has been long identified with an art in which he himself excelled. We also are desirous that it may increase the practice of this interesting and innocent amusement, the pursuit of which keeps hundreds of our London youths from gambling, thieving, and drinking, and tends to make them enterprising and attentive to one object, the want of fixing the attention being the worst habit of youth. Under this impression, we regard with pleasure the banks of the New River when studded with youths exerting their energies to ensnare the wary fish. The directions there introduced are as follows: "In spinning a minnow, by which large trout and many other fish are taken, you should use the bag rod with the perch top, though you may make shift with the other rod, if you have a stiff top to it, but being shorter it will not command so much water as the first. The winch and running line should be used, at the bottom of which you must have tackle of the following description in the room of any other gut lengthener (unless what was there before was a very strong one, when you may join this to it), the lower length of very strong gut fastened tight to a No. 1. hook with a long shank: about three inches above this you must attach a short piece of gut with a No. 7. hook tied on, so that it may hang even with the top of the shank of the large one: you may then add to these two lengths of strong gut which may be twisted, or otherwise joined together by means of two small box swivels, with one or two shots to sink it; or some use a conical hollow piece of lead to slip down over the noose of the bait, which I think is better. To bait the above, pass the large hook down the throat through the whole length of the body, and bring it out at the tail of the minnow, then put the small hook through the jaws of the fish, slide down the lead, and it is now ready to put to your line. When you make shift without the small hook, put the large one through the lower and upper jaw, drawing three or four inches of gut with it, and then pass it as before described; draw the gut tight, and it is ready. This is a very inferior way: I should not have mentioned it, had it not been that you can use it when you have not other tackle fitted up. Spinning a minnow is performed as follows: cast your bait across or down the stream; then draw it towards you for a yard or two, either against or across the current, and it will spin round; then let it sink a little, and repeat it, until it wants throwing forth again. The most likely places are currents, waterfalls, milltails, weirs, &c. When at a place where you stand on an eminence, first try close to you, then

let out four or five yards of line, and try again, and so on, till you have let it down the stream as far as your line will permit, which is the most likely way of taking them, as they will not bite when they see you. Some anglers use a small bleak, but I think it inferior to the minnow, except for pike or jack. I have taken chub, jack, and perch by these means. Observe, in spinning the minnow, the fish (if a trout) will mostly hook himself; but it is as well to strike the moment you feel or see a bite." (*The Jolly Angler*, p. 77.)

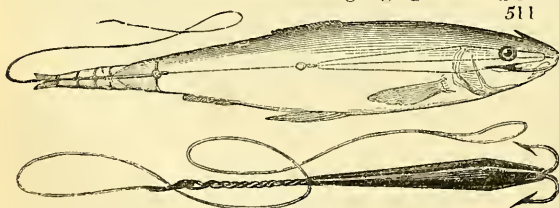
3244. *Minnow spinning with one hook* is thus described by Mr. Lascelles:—"Have a large hook (No. 1 or 2.), rather long in the shank, and wrap it very neatly on to your gut, which should be at least a yard in length, extending the wrapping on the gut for about an inch or a little more, which will cause it to spin the better; and to promote this still further, I would have you use two swivels: draw your hook first through the mouth of the minnow and out at the gill, then turning it again through the mouth, bring the point of the hook all the way down the sides, rather nearest the belly, and quite to the fork, drawing out the point at the tail, and leaving it somewhat on a curve, which, from the opposition it will make to the stream, will cause it to spin the better; and, to make it sink, you must have two large shots on your gut, betwixt the hook and the lower swivel.

"In throwing the minnow, considerable art is required to keep it entire and untorn, for there is great reason to apprehend damage from an unskilful performer: to prevent this as much as possible, never allow your line to go out to the full extent, lest, by a sudden jerk, you either get rid of your bait, or tear it so as to be entirely useless: your plan will be, to let it meet the stream exactly at the moment when it would otherwise gain its greatest extent of distance; it will fall much lighter, make less disturbance in the water, and altogether have a neater appearance, and be more likely to excite the attention of a fish, which, by a little playful and dexterous management, you may often entice to take your bait, contrary perhaps to his real inclination. The best time of day for this species of angling is early in a morning, in deep holes, and near the roots of trees, but especially if the water be recovering from an overflow of rain."

3245. *In this method* the turn of gut, including the whole space between the mouth and gill, is apt, when it is fully softened, to pucker draw and disfigure the fish. Were it not that the gut necessary to be used is apt to break by too close a knot, it would be much better first to enter the point of the hook below the mouth of the minnow, passing it *through* both lips, and drawing with it enough gut to be enabled to return the hook, then entering it *within*, to pass it on to the tail, as described by Mr. L. By this method a secure half hitch will be formed; and if fine gut previously soaked, or at least passed well through Indian rubber till perfectly flexible, be used, it may be practised to advantage with moderate safety. It must however be remembered, that a very heavy fish might probably endanger such strong gut as is necessary for the purpose. This disadvantage might be remedied by making use of platted silk instead of gut. These methods will again be adverted to, when we treat on the minnow spinning as particularly practised in trout angling.

3246. *The practice of minnow spinning* is equally adapted for deep still waters, and for rapid scowers. It will, however, require some skill in the angler to spin the bait effectively in still deeps, but practice and a nimble turn of the hand will effect this necessary mode of showing it; for without, the sight of the line, which the quick turns of the bait alone can hide, will almost immediately scare the fish. In shallows, the minnow will readily spin by its own resistance to the water; but it is to be remembered, that the more shallow the stream, the further the angler should stand from it; in which case it will be prudent to give somewhat more length to the line. In drawing it through a scower, let it pass smoothly to about midwater, and then imitate a minnow striving against the stream, draw it quickly upwards. Occasionally let it glide down the stream; in fact, vary the action to give every attitude which the habit or caprice of the fish is likely to assume. We shall have occasion to notice other methods of mounting the minnow when we treat of trout fishing.

3247. *The minnow used in trolling, roving, dipping, and drawing with, as a dead bait*, is mounted either on a double or single gorge-hook (*fig. 511.*), which may be pro-



MINNOW DEAD BAIT.

511 cured at tackle-shops. One of these should be whipped to strong gut, either single or twisted, according to the angler's opinion of the necessity of fishing fine or strong. If jack are likely to be present, the strongest twisted gut will be required; and even that will be endangered by any thing

beyond one or two pounds. But unless they form one of the immediate objects of the angler's sport, the finer the tackle the greater will be his chance of success with every other fish. Having looped the gut, introduce a minnow needle into the mouth of the bait, and

bring it out at the middle of the fork of its tail. The leaded part of the hook, if properly sized and formed, will lie concealed in the belly of the minnow, and the points of the hooks or hook will lie directed upwards, close to the jaws of the bait. To keep the bait from being forced forwards on the hook, it is necessary either that it be tied firmly round the tail with light blue thread, or otherwise, which is a much neater practice, that the needle and thread be passed through the tail, first on one side and then on the other, including within the return the back bone of the fish and the shank of the gorge, and then that the ends be tied on the side first entered after the previous directions have been followed.

3248. *Swivel-traces.* The loop of the gut should now be fastened to swivel traces, which are fitted upon two lengths of picked gut, strong and even. For strong fishings twisted gut is sometimes used. These gut lengths are to be united by placing a small box swivel between them; then loop one end of the gut firmly, and to the other fit securely, but neatly, a small hook swivel, on which hang the loop of baited gut; and lastly, attach the loop of the traces to the reel line. These traces, which are to be always employed in minnow spinning of every kind, are figured with the mounted minnow, to appear anon.

3249. *The method of using the minnow on a gorge-hook in trolling, roving, or dipping,* varies a little according as one or other of these practices is pursued, premising that a similar rod should be employed both in the trolling and spinning, as that recommended for live bait minnow fishing.

3250. *Minnow trolling and roving* requires that the bait line and rod line together occupy a length equal, or nearly equal, to the rod, with the rod held firmly (about the middle of the butt) in one hand, and in the other a yard and a half of loose line drawn from the reel. Now let the bait rather swing than be cast from you in any direction you choose, delivering it on the water with as little disturbance as possible. If trout be the object, cast it beyond a current, and then draw it through, raising and lowering it as it proceeds across. If you feel a trout seize the bait, strike him after a slight pause, but not before, it being necessary to remember, that more time is to be allowed here than is requisite in live bait trolling, where the hook is usually seized with the fish, and an early stroke is necessary to fix it. The deeper pools should be tried for perch, and shady holes for chub, in all cases taking the widest range possible with the bait, and imitating in the play of it the natural motions of the minnow as much as they can be done, now quickly, and now with a momentary respite, which sometimes induces the fish to dart at it. This mode, which may also be called the *diving minnow*, has an advantage over all others for still pools, which are the situations large trout occasionally choose as a strong hold: the gorge minnow diving down into this proves often irresistible, and is taken at once.

3251. *In dipping and drawing*, the action is more confined; the line is also shorter, and the practice itself is particularly adapted to confined situations, where a perfect command over the bait is retained in the hand of the angler. The bait is to be gently dropped on the top of the water, and then suffered to go freely to the bottom, which will show it to advantage. Now draw it from side to side; and, by occasionally raising it to the surface, give its descent a new direction. Drop it between piles, above the first reflux of eddies, and into the centre of whirlpools, in the bends of rivers, and under the overhanging stumps and roots of trees.

3252. *Trolling, roving, or dipping* with a minnow on a hook, leaded at its shank for the purpose, will frequently secure large trout, perch, chub, and jack; and though the practice is far less elegant, it has some advantages over spinning the minnow. By these latter modes, the bait can be let down between the openings in weedy waters; or it can be cast wide away across a current, where it may chance to meet the trout or perch. In the proper situations, if fine gimp be used instead of gut, the minnow thus applied will prove as tempting a bait to young jack as the gudgeon, and we have found it even more so in many instances.

3253. *Foxing of minnows.* When these baits are not to be procured by any other means, it is recommended by Mr. Daniel to revive the old method detailed by Walton, of dosing them with small pills of *Cocculus Indicus*. The practice we leave to absolute necessity, which can alone sanction it; but that minnows so taken "are brighter, and will endure to lie longer in the water than those taken in any other manner," is totally at variance with all the analogies of poisons, which leave the body particularly liable to a more early decomposition.

3254. *To preserve dead minnows* it is now common to salt them. If to the common salt there be added a small portion of bay salt, it will harden them still more. The pyroligneous acid would, without doubt, preserve them also: and if there can be an attractive quality in tar (Mr. Daniel directs worms to be dipped in it), then the scent might not be injurious, but serviceable. It is advisable to destroy minnows as soon as they come out of the water, either by a blow on the back of the head, or otherwise by at once plunging them into salt: either of these methods tends much to harden and preserve them.

We would also recommend to the angler to try the effects of sugar in preserving them, according to Dr. McCulloch's method, which does not differ in the operation from that of salt. It will most assuredly keep them as well; but whether they will be as firm, our experience does not enable us to state. When minnows are taken out of any such pickle for use, they should be first dried from their moisture, and then, instead of being each wrapped in paper, let them be well rolled in dry bran, which will more effectually preserve them

than any other method. Many experienced minnow spinners even prefer one that has been laid in bran an hour or two to one fresh caught. Putting them in wet moss is by no means a good practice. For minnows after they have been dried, a japanned tin box, not unlike a tobacco-box, is a convenient receptacle: in this they may be laid straight, side by side, but without actually touching each other; then fill up the interstices with bran, and let the box be kept in the coolest situation about the angler.

3255. *The bullhead, or miller's thumb*, is occasionally fitted up on a gorge-hook, and will then make a very respectable trolling dead bait. Eels will very readily take them as night line baits. As living baits they are entitled to little notice, although we make no doubt an experienced angler would contrive to show them to such advantage as to get a *run* from something. It is usual to cut away the spines from the angles of the gill-covers, but there is no real necessity for this; since, as already observed, the jack would take him head foremost, when his spines would lie as snug as his gills. To make all sure, these may however be cut off.

3256. *The gudgeon as a dead bait* is the groundwork of the troller's hopes; and as we shall have to say so much of it when treating of pike fishing, we shall here only hint at its general qualities as a bait; among which are its showing well in the water, and not becoming water-sopped so soon as roach and dace. Nor are the scales so easily parted with when dead as they are with them, to the injury of the bait's appearance. The figure of the gudgeon is also more adapted to receive a gorge-hook than that of any of the flat-sided fish, as bleak, dace, &c., which are apt to look distorted with a leaded hook, if proportioned to the length of the fish. With a gorge-hook the gudgeon may be considered as an almost universal bait for predaceous fish, as it is taken with equal eagerness by large trout, large perch, and pike.

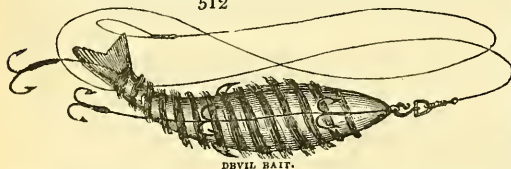
3257. *To preserve gudgeons as dead baits*, it is advisable to kill them as soon as they are taken out of the water, and preserved in fresh bran, after pricking the spinal marrow. This remark applies also to all bait fish, which, if suffered to lie on the ground to die in heat and moisture, become limp and discoloured, and never again recover their brilliancy or firmness; whereas, on the principle of fish crimping, when they are at once destroyed by a momentary violence, the muscles immediately harden, and the process of decomposition is delayed as long as they remain so, which is many hours longer than when not thus treated.

3258. *A bait box* should be purposely made for gudgeons, and, as already observed by Mr. Salter, none is better than the usual sandwich-box, or one of a similar shape, from six to eight inches long, four and a half or five inches broad, and even an inch and a half deep.

3259. *Perch as live baits* are valuable to the pike and jack fisher; for, as already noticed, it is a great mistake to think that these fish refuse them. We have *trolled* very often with perch, even when roach and dace were within reach; and we greatly prefer them to others when bait fish are scarce, because they will remain three times as long without lacerating as either roach or dace, twice as long as a gudgeon, and will *show* well at last. On a stormy day of 1824, when we could only muster one small perch, we took with it three small jack on a gorge-hook. We confess it was rather the worse for wear when we unpouched it from the maw of the second jack; and had not the last jack been unusually eager, it is possible he might have paused before he ventured on the already twice disgorged bait. It is needless to say its ragged trim rendered it unfit to go any more into company. Roach, dace, chub, and bleak, as white fish, are also each of them showy dead baits on the gorge, snap, or other hooks. The flat sides of the bleak, however, are more favourable to some other modes of baiting than that of the usual gorge-hook, but a small flat leaded one, purposely made and well introduced, will nevertheless make it a respectable bait. A greater inconvenience occurs from the scales of this fish becoming loosened so soon. If, however, bleak be immersed in vinegar, or rolled in salt, as soon as killed, they will retain their scales much longer. Smelts and sprats are also used as trolling baits.

3260. *The artificial devil bait*, as it is called, has found many advocates; and strange as its representation (*fig. 512.*) may seem, it was at one time even popular, and is yet to be

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DEVIL BAIT.

purchased at most fishing-tackle shops. It is formed of the most glittering materials, as tinsel, &c. &c.; and is usually studded with glossy matters. It is intended to imitate a minnow in size and shape, and its bright tins serves to make it more showy, as its bent shape assists in making it

revolve rapidly in the water, and thereby attracts notice. It is fitted up in various ways, but it usually follows one or other of the manners employed for spinning the minnow, save and except the loose hooks appended to the sides, which are seen to be considerably extended out, as was the case with that we copied this from. We would however observe, that these double hooks may be lessened in number, and need not extend so far beyond the body of the effigy. We have represented it, and we have heard good anglers applaud it; but it is best for mill-tails and rapid streams.

3261. *The entrails of chickens* also may be so fixed on a double hook, or, what is better, they may be so drawn over a gorge-hook, one within another, as to form a taking bait for jack and pike: sewing them dexterously together will also assist the process, otherwise

they are apt to loosen. Bacon cut to imitate a fish-bait of four or five ounces, and penetrated by a gorge-hook, has been not unfrequently employed against pike also. In fact, in situations where pike and jack-food is scarce, they will take almost any thing; and so it is not unusual under these circumstances to take them readily with the bacon bait and snap-hooks, as above described.

SUBJECT. 3. *Artificial animal Baits.*

3262. *Almost every animal* that fish are known to prey upon, has been imitated by man. The ingenuity of fishing-tackle makers has occasionally shone resplendent in this particular, but as frequently has failed. We might, for the sake of system, commence with artificial flies, on which we shall have much to say hereafter; but before we part from them, we will just notice the grotesque figures we sometimes meet with in the cases of some of these artists, such as beetles, grasshoppers, &c. &c. We must, however, observe, that we have been delighted with the exact resemblance shown us by others. If anglers will encourage these, they will compete with each other to produce a very correct likeness of any bait whatever. Mrs. A. Lewis, flymaker, Hereford, excels,

3263. *Of fish the imitations are numerous.* One of the latest inventions deserves notice for its hybrid character as a bait; with which, in our love of system, we have been extremely puzzled to know how or where to place it. If we had taken a hint from the maker, we should have been at no loss in giving it a niche with artificial flies; for it was in company with them when we first saw it. But for fear we should occasion a schism among them, it must remain where it does. It is called the minnow-fly, and is a diminutive representation of this fish, sufficiently light to be drawn on the top of the water, and in this way is said to prove a good bait for trout. It is also used at mid-water in sharp rippling streams, and is spoken highly of by some anglers. *A priori*, one might be led to suppose it only likely to be taken by trout which, particularly when they are in a capricious mood, rise at every thing; but in these humours they seldom take any thing, however readily they may rise to whatever is thrown to them. We have ourselves never used this bait; nevertheless, we are disposed to think it worthy of a trial, particularly for salmon, whose risings are thought to be equally capricious with trout, but that they more often take what they rise at than trout. After all, we however do know, that the minnow-fly increases in its reputation with many, and we therefore recommend it for trial; and moreover will, when our time is more our own than at present, try it ourselves. The common imitative minnow is made of wool, fashioned around one or two hooks; the whole is then covered with oilskin, and is afterwards painted to the life. In other instances it is made of wood or cork, and sometimes of mother of pearl. We believe that these latter representations of living minnows are now justly held in great contempt: after repeated trials we never hooked a fish with one, although we confess to have once or twice stirred a trout, and to have brought him to a rush; but further than this, deponent sayeth not.

3264. *The artificial gudgeon and artificial minnow* have recently been imitated very accurately and with very great success. The best are made of India-rubber or gutta percha painted properly. They can be bent any way, and hence are called "flexible." Mr. Flinn, of Worcester, is the inventor and the best maker of them. They kill well; the flexible gudgeon, pike, and large trout; the flexible minnow, perch, jack and middle-sized trout. Sand-eels are imitated in the same way, and are good baits for trout, and passable ones for salmon. These baits made very large, say six inches in length and thick in proportion, will kill the *Salmo ferax* and other large lake trout. See *The Rod and Line* (Longmans).

SUBJECT. 4. *Pastes for Angling.*

3265. *Pastes* are known as a species of hook bait used in still and deep anglings. Ground baits are matters which very generally accompany these and other hook baits: they are usually of a *nature similar* to the hook bait used, but inferior in *quality*. The ground bait being spread around in large quantities, is supposed to attract and congregate the fishes, which being thus called together, soon discover the superior attractions of the hook bait, and thus are lured to fulfil the intentions of the angler.

3266. *Pastes are important baits* among professed bottom anglers, who compound them with great skill and care: and the well fed fish are by these means become so dainty, that unless these pastes are continued to be worked up with perfectly clean hands and pure materials, they will fail in their intent. The infinity of articles which used to enter the paste list are now reduced to comparatively very few; but enough remains to secure every one of those fish which take a bait in this form. *Pastes* are liable to turn sour, or to become fetid; consequently much care is required in keeping them, and it is highly necessary to renew them often. It has been common to unite with the substance of pastes a little fine cotton, or wool, to make them more readily adhere to the hook; but this we believe to be seldom necessary when either bread, dough, or flour is used, if the angler will allow himself sufficient time for the kneading. *Pastes* are nevertheless occasionally required, and when used are usually placed on small hooks, but the size must vary with the fish baited for, and consequently the quantity of paste also. Chub and barbel take a ball as large as a hazel-nut; the latter will take even more. Roach and dace require a pellet of the size of a marrow-fat pea, and from this down to a pin's head.

3267. *Salmon's roe, and salmon's roe paste.* Barker, we believe, was the first discoverer of the extreme efficiency of this bait, although it had been well known for centuries, that one of the favourite repasts of fish was the spawn of each other; and that some do not hesitate to eat their own, or that of the same species at least. Barker's letter on the subject, as written to his patron, has been preserved, and is a curious specimen of the love of angling:—

"Noble lord,—I have found an *experience* of late, which you may angle with, and take great store of this kind of fish. First, it is the best bait for a trout that I have seen in all

my time ; and will take great store, and not fail if they be there. Secondly, it is a special bait for dace or dare, good for chub or bottlin, or grayling. The bait is the roe of a salmon or trout : if it be a large trout, that the spawns be any thing great, you must angle for the trout with this as you angle with the brandling, taking a pair of scissors, and cut so much as a large hazel-nut, and bait your hook, so fall to your sport ; there is no doubt of pleasure. If I had known it but twenty years ago, I would have gained a hundred pounds only with that bait. I am bound in duty to divulge it to your honour, and not carry it to my grave with me. I do desire that men of quality should have it, that delight in that pleasure. The greedy angler will murmur at me, but for that I care not. For the angling for the scale-fish, they must angle either with cork or quill, plumbing their ground, and with feeding with the same bait, taking them asunder, that they may spread abroad, that the fish may feed and come to your place : there is no doubt of pleasure, angling with fine tackles or single hair lines, at least five or six lengths long, a small hook, with two or three spawns. The bait will hold one week ; if you keep it on any longer, you must hang it up to dry a little : when you go to your pleasure again, put the bait in a little water it will come in kind again." This was, indeed, a notable discovery of Barker's, and salmon roe is a favourite bait to this day.

3268. *As regards the value of salmon or trout roe as a bait*, Barker's intelligence has been confirmed : it is not, however, a universal bait, but kills better in some waters than in others. In real salmon and trout rivers it seldom fails to entice fish, and that in a degree beyond any other bottom bait whatever. In our journeyings we made many inquiries relative to what may be called its *natural history* ; but at that time it was but little acknowledged by angling professors, and a kind of mystery hung around its preparation, &c. We were however given to understand, from several sources, that some particular state of the fish, and that not a healthy one, was necessary to the perfection of the bait. We do not find this confirmed by the later accounts of angling writers, but we must confess that we do not now hear of its being so invariably successful as it then was said to be. This may, however, arise from the levelling influence of time, which reduces the standard of most things to their just admeasurements and value.

3269. *The period at which the spawn is most effective as a bait* is differently stated. Mr. Salter says that it is best when collected about two months before spawning time, with which we cannot agree. It may then make paste ; but as spawn, in this immature state, the ova betray their imperfect evolution by their appearance. When salmon, from circumstances, have been prevented from spawning at the appointed time, we are disposed to think such spawn is peculiarly grateful to fish ; and it becomes, as we know, firmer and more adhesive than other spawn. Healthy spawn, or roe, is never better as a bait than when it is collected about a fortnight or three weeks before spawning. We saw at Lancaster some roe for sale ; it was then laid in cakes in a box with woollen wads between each layer ; but it was denied that it had been salted. It had evidently been picked very clean from its membranous adherences, and was pressed very close and flat ; but if our memory be correct, the *pea*, as the individual ovum is called, was distinct and unbroken. It must, therefore, have been subjected to gradual pressure in a mass, probably having been first slightly salted with common salt ; and perhaps a small portion of bay salt had been added to it. That the structure of the ova should be preserved entire, we think is of much importance to the value of the salmon roe, and if so, what is called salmon paste must be greatly inferior to the actual roe well preserved.

3270. *To preserve salmon roe* we should recommend, instead of salt, that sugar be employed after the method directed by Dr. McCulloch, of Edinburgh (p. 1025.) ; and as it is observed that honied baits are well received by fish, we see no reason why they should not prefer it so preserved to the saline mode. The former method of preserving it was to lay it on a wooden plank, pressing it moderately by means of another plank : then hanging it, exposed to a gentle heat, until it becomes firm. It is reasonable to suppose, that this was a very good plan, provided the process of desiccation was slowly but effectually performed.

3271. *For preserving this spawn* a more modern method has arisen, by which it has been kept good two years in a cool situation. A pound of spawn is immersed in water as hot as the hands can bear it, and is then picked from membranous films, &c. It is now to be rinsed with cold water, and hung up to drain for twenty-four hours ; after which put to it two ounces of rock or bay salt, and a quarter of an ounce of salt-petre, and again hang it up for twenty-four hours more. Now spread it on a dish, and gently dry it before the fire or in the sun, and when it becomes stiff put it down. We should, however, recommend that the potting be not in one mass, but, like the shrimp paste sold at the fish-sauce shops, that it be divided into small pots, pouring over each some melted suet, by which method a pot can be opened when wanted, instead of disturbing the general store. It forms an additional security to cover each over with a moistened skin or bladder. Trout roe is also said to make a good bait, but we have no personal experience of its efficacy : in fact, we never tried it ; but it has been so strongly recommended, that it would be but fair to give credence to its value until numerous trials have proclaimed it as totally inert.

3272. *To bait with salmon roe*, first put on the hook (which should be sized according to the fish intended to be tried for) a mass which shall fill up the hollow of the bend, and hide the steel. On the point put two or more firm large grains of it, both to conceal the snare and tempt the fish. In this way it is said to be principally a winter and a spring bait, but we know no reason why it may not be advantageously used at other times, for spawn of some kind is almost always to be found. At Uxbridge we saw in the preserved water a scene of destruction we grieved at : it was committed by two gentlemen who gloried in killing all the trout in the pool, and the quantity was such (thirty pounds'

weight) as would have furnished excellent sport to the fly-fishers who frequented the White Horse Inn for many days. Killing fish is a delightful amusement; but there is a species of fish murder which should be branded as direct poaching, and punished with the contempt of every generous sportsman. Salmon and trout are perhaps the greatest gourmands at this bait: grayling appear to be next in succession, and roach, dace, and chub, bring up the rear.

3273. *Shrimp paste* is also made and used by some anglers, particularly for perch and roach, and we believe that chub may be also occasionally taken by it; but we are not aware of any great merit that it possesses. It is, however, prepared and used after the manner of the salmon roe paste.

3274. *Cheese paste* is also used by some anglers, and is made from either new or old cheese, by mixing it with stale bread if the cheese be new, and with new bread for old decayed Cheshire cheese. From either mixture, by a long continued kneading, an excellent adhesive paste may be made, which for winter fishing will be found a valuable bait: the new cheese and old bread for roach, and the old cheese and new bread for chub. At least, in our own anglings, these varieties have proved to have answered the ends required. Bream will sometimes take both these kinds, and chub are taken with them both before and after spawning.

3275. *Sweet paste is thus made*:—Take any quantity of the crumbs of new bread, and after dipping it in honey, work it in the hands until the honey be incorporated, and the mass be of sufficient tenacity to remain well on the hook. When honey is not at hand, use a syrup made of white sugar. Nothing shows the capricious tastes of fishes more than this bait: carp will take it greedily one day, and will refuse it the next. A friend of ours procured permission to fish in a preserved water in Surrey, which was stored with large carp, and his leave included permission for a friend. It so happened, that although he went himself, we could not make use of our ticket that day. Our friend was prepared with several reputed carp baits, among which was the paste in question: with this he killed three brace of very heavy carp, and returned delighted with his sport. On the following week we also took our sweet paste, our ticket, and our stand, and began under the most flattering auspices, as the day was mild and gloomy. We pursued our angling "from noon even until night," and we took at length one small carp, and a moderate-sized tench also; and thus the same fish which had contended for the bait on one day, wholly refused it a few days after. However, the experience of every angler will furnish him with instances nearly similar: perhaps the anomalies are less in most other pastes than in this.

3276. *As a bait for carp* Mr. Salter remarks, that it is a most killing one during the months of July and August, and as long afterwards as the fishing season lasts. As regards carp, we think this paste has a very peculiar claim on the angler, who cannot be at his post too early and late, where the carp fisher should be in most cases. With this allure, he may obviate the necessity without destroying his sport; for we think this is one of the few baits which the carp in favourable weather will take even at midday. Tench are also fond of it, but less so than carp. Chub may be taken by it sometimes very well, and roach will seldom refuse it. When using it, groundbait with No. 2. (page 1031.), but do not cast it wide in still waters.

3277. *A keeping paste*, dignified by some London anglers with the name of the patent paste (though we never heard of the patent being enrolled) is made by separating the vegetable parts of flour from the pure gluten. Knead any quantity of flour with cold water, added by small quantities at a time, but avoid saturating it beyond the consistence of soft dough; and let the process be conducted slowly. The dough, when well formed, should be thoroughly washed in repeated fresh waters, at each time doing it in one mass, pressing it as dry as possible from the last water that had been applied. Continue this until the whole assumes the consistency of birdlime, and will no longer tinge the water it is washed in. This paste has two advantages: one is, that it will keep many months in wet cloths or under water, which is indeed the most certain method of preserving it. When used also, it must be surrounded with a very wet cloth to keep it from hardening, and the fingers must be dipped into water before affixing it on the hook, which is effected in manner and quantity as other pastes. When it has been put on the hook, its second valuable property becomes at once apparent by its adhering fast to it, let the current be what it may. With these qualities it may be useful in those rapid waters no other paste can withstand. But when it is recollected that the very perfection of the process of making it depends on the abstraction of two out of three of the component parts of the flour of which it is made, and both of which are acceptable to fish, it can be matter of no great surprise that, as a bait, it proves greatly inferior to the more simple *common bread paste*, in which the *farina*, compounded of gluten, starch, and mucilage, is kept entire.

3278. *Common bread paste* is made either of new or stale bread, according to circumstances; and as this, in the opinion of the best bottom fishers, is somewhat important to the success of different anglings, we shall detail each separately. New bread paste is made by intimately kneading together in the hands, for a few minutes, three-fourths of new with one-fourth of stale bread, without dipping in water. This working will bring it into a very glutinous adhesive paste: it is particularly fitted, therefore, for angling in strong eddies and powerful streams: but it does not apply so well to the finer fishings for roach and dace in moderate streams and still deeps, since it will not separate so readily from the hook as the paste made from stale bread; and this peculiar property of separating, the experienced roach fisher considers to be essential. In chub fishing, on the contrary, it forms a valuable property in this paste, as a larger piece will adhere to a larger hook, which would be soon washed off from the other. It is also more useful than the stale bread paste for taking dace in the Thames, as well as the streamy parts of all other dace rivers. This paste is convenient from the quickness with which it is made, and which, if the angler have far to travel for his sport, should be done at the water side to prevent its drying.

3279. *Stale bread paste* is made of bread one day, or at most only two days old; in which latter case the requisite portions of the bread should be taken from the centre of the loaf. It should be first momentarily dipped in water, and instantly squeezed as dry as possible; then placing it in the palm of one hand, with the fingers or knuckles of the other continue to knead and work it twenty minutes, which will make it a stiff uniform mass. It is well to

observe, that as all bread pastes have a tendency to become quickly sour, particularly if wetted, it is advisable, should the angler have some miles to travel, that he carry the bread with him in the form of a small loaf or roll, which will enable him to keep his paste from drying too much, and from becoming sour. This excellent paste might with great propriety be distinguished by the term roach paste, as it is that which most professed roach anglers use, particularly those who fish from banks in still deeps. With this paste our friend heretofore mentioned used invariably to bait his hook in his late winter fishings in the Lea (gentles supplied his hook in the more early winter months). He was a most excellent roach fisher, and his preference of this paste arose from a full experience of its superiority over all others of the kind for these fish under the circumstances adverted to. In the roach streams of the Thames and some other rivers, new bread paste is occasionally preferred; but the readiness with which paste of stale bread is affixed to the smallest roach hook, as No. 10, 11, or 12., and the little tendency it has, from being less tenacious and solid, to resist the entrance of the hook into the roach's mouth, make it certainly the preferable paste for these fish; and, moreover, they seldom refuse it at any season. Bread pastes are taken by barbel, carp, tench, chub, dace, and minnows. Even bleak will occasionally be tempted; but the occurrence is somewhat rare.

3280. *Barbel paste* of a more tempting kind may be made by dipping bread into the liquor from which greaves have been taken after soaking, using it instead of water for the mixing. In this case we think the introduction of wool into the mass useful, as otherwise the current will wash it away, or at least will expose the point of the hook, which we, however, obviated in our own practice by putting on the point a firm minute white morsel of greaves. Bream will sometimes take this paste.

3281. *Coloured pastes* are of various kinds. A principal one is that tinged with vermilion, and is intended to give it the hue of fresh fish spawn. Some fancy-anglers tint their paste yellow with turmeric; and as fish, when thoroughly on the feed, will take any thing almost, so these varieties assume the character of killing baits; but these occurrences being rare, the error gradually cures itself.

3282. *In the general application of baits on the hook*, experience and dexterity are both required. Let the hook be perfectly dried by wiping before it is attempted to put on the paste, a sufficient portion of which should be separated by the finger and thumb from the mass; and when rolled into an oval form, should be forced on the hook by pressing it into the hollow of the bend, so as completely to cover the whole of it, allowing the upper part of the shank only to appear, and which should seem to spring from the centre of the mass. A little practice will of itself teach the process, perhaps, better than written instructions, which, however, are useful, as they first awaken the mind to a conviction of the necessity of being particular in these matters, and they also lessen the incipient difficulties of the practice. One caution we think advisable with regard to such pastes as are little adhesive, that in pressing them on the hook they be rather flattened than round, as regards the area formed by the barb and bend, by which the force of the current will operate on that surface of the paste most which has two points of contact, and least where it has but one.

3283. *Paste hooks should be whipped with white silk.* We always whipped our hook and gut with white silk and white wax, that the contrast of colour between the white paste and black whipping might not be too apparent. In aid of this also we shortened our shank, and we strongly recommend both of these practices to anglers whenever fishing with white paste. It will also be found to prevent the stale bread paste from so readily separating from the hook, which is very apt to occur in fine roach fishing, if the bend of it be whipped very finely with small white cotton, about eight or ten turns of which will extend three-eighths of an inch, and will be sufficient. This plan certainly tends to retain the paste on the hook in quick streams, the constant tendency to washing off being one of the great drawbacks on the pleasure of paste-fishing.

SECT. VII. *Ground Baits.*

3284. *We might commence by remarking on the great variety of these baits;* nor is it to be wondered at. The angler who has extended his observations beyond the precincts of his own immediate vicinity, must have been struck with the diversities of opinions and practice which distance creates in his favourite sport. We have had many occasions to notice these differences, and we have embraced them with a view to extend at large our systematic and general view of the art. Of these instances, few are more prominent than the little attention which is paid to ground baits by the ordinary bottom fishers of distant counties; while with the metropolitan angler they form a very important feature in his practice, and he would almost as soon angle without baiting his hook, as he would wet his line without first drawing the fish together by *baiting the ground*. In the oft frequented waters within the reach of these professors in the art, the fish resort to certain spots, holes, or swims, in expectation of these matters so frequently offered them, in the same manner as trout come to the head of stews to be worm-fed in the great preserves at an accustomed hour: and thus the habit of preparing the ground for the fish of these waters is kept up, and it is in vain to expect good sport without it.

3285. *Of the importance of ground bait*, Mr. Salter (who was known to have been himself a most excellent bottom angler) very justly observes, that if, however, ground bait is neglected by the inexperienced, or avoided by the idle fisher, little success will attend his efforts in bottom or float fishing; and we may further observe, that it is chiefly by the judicious use of *ground baits*, and by fishing at a *proper depth*, that one angler is more successful than another, although fishing with the same baits and within a few yards of each other. Nor is this surprising, when the rationale of the action of ground bait is considered. Fishes

naturally congregate where they have been led by any singularity of appearance in the waters they inhabit: thus they are on the alert, and take every kind of bait eagerly, when a flood is coming down. Conscious that food of different kinds is forced along by the sweeping current, they are on the look-out to receive it; and thus also when ground bait is thrown down it attracts the attention and draws fish together, which finding that an edible is presented to them are detained there; and although their naturally roving disposition may carry them away again, fresh supplies render their absence short, and they instinctively return to the scene of former plenty. It is the principle of ground bait to attract fish without glutting them; and thus, although edible matters enter into the composition of ground baits, yet they are, or ought to be, always inferior to the hook baits offered at the same time, by which the fish may be tempted to leave the ground bait for the more delicate morsel on the hook.

3286. *Ground baits should be laid previously to fishing.* On the principle that from memory fish will repair to spots where they have before found food in considerable quantities, it is the practice of all experienced anglers, not only to groundbait the spots they intend to fish in during the time of their practice, but also to do the same the evening before if possible, which is sure to detain them, or bring them again in the morning to revisit the place; and it more certainly collects into one focus those fish which otherwise would radiate every where around. So convinced are anglers of the advantage of a previous evening's groundbaiting of the waters they purpose angling in, that many who cannot be present themselves, send or give directions to have it done for them. When fish are very scarce, it is politic to previously groundbait a place several successive days, to give the distant fish a habit of coming to the spot daily.

3287. *In the use of ground baits*, the nature of the water, and also the kind of fish intended to be angled for should be considered. It is essential also that the ground and hook baits be of the same kind, in colour, taste, and smell, but not so necessary that their qualities be the same: they should, on the contrary, be more attractive, or, as we might say, *piquant*. A quick rapid stream must have massive ground baits that will resist the current: still waters require more diffused matters. Varieties in fish will make some difference in the quality of the ground bait likewise. To draw together perch, trout, barbel, &c. animal substances, as worms, particularly such as are conspicuous, as lob or dew-worms, should be stuck into masses of clay, which by attracting attention may detain the fish around. It is a good plan to chop these up; and when thrown in for a few days, the diurnal bounty insures fish not being far off. Roach and dace, chub and bream, frequent spots where malt and malt-house sweepings, chaff, bran, &c. have been previously scattered; and it is thus that gamekeepers not only keep their own fish to certain localities, but also tempt those of their neighbours. In Hertfordshire a gentleman, not himself much of a sportsman, lamented to us that, although he much wished to oblige some friends with a few days' tolerable fishing, he entirely despaired of being able to do it, for the poachers had carried away all his fish. They certainly had grievously thinned his waters; but as a certain tenacious nobleman, who had a very clever gamekeeper, lived not very distant, we were confident that he had many in store. I recommended this gentleman therefore to doubly bait his water, as I well knew the keeper baited his; and he did so, by throwing in a profusion of various matters night and morning for a fortnight, well watching it during the time. The consequence of this method of procedure was, that he gave his friends a week's excellent sport. Cheese is thus used for chub and barbel.

3288. *A general rule regarding ground bait* is, that in most cases it should be of the same nature with the hook bait; but it must be inferior in quality. If this condition be not observed, some fish may leave the latter for the former; whereas, by thus adapting them, the fish will be thrown off their guard, and take the hook bait with less caution when it resembles the ground bait, of which they have partaken with impunity. This rule however, like most others, admits of exceptions: it is the principle that we advocate.

3289. *Proceeding to the formation of ground baits*, after these preliminary remarks, we shall detail the general practice, as pursued by the best bottom anglers in the formation of these matters, numbering them for future reference.

3290. No. 1. *Bran and clay ground bait* is the most simple, and the most common in use among anglers, particularly for roach, dace, and bleak. Take some adhesive light mud or clay from any convenient spot, and mix with it a quantity of bran or coarse pollard. Of this mixture drop in here and there around you masses of the size of a pigeon's egg. If there be any current put a stone within each, sufficient to sink and retain it below. The force of the current should likewise be calculated: if it be very sharp, let the stone be rather larger, and also cast it in rather above the part of the water you wish it to rest on. This ground bait we recommend as the most proper for swift streams and currents of large rivers, as the Thames, &c. In such waters a large supply is necessary to meet the driftings and solvent powers of the rapid flow; and this being not costly, can be thrown down in liberal quantities, on which success so much depends.

3291. No. 2. *A meal ground bait* is one which is particularly calculated for the deep pools of rivers and gentle eddies, which form the strong holds of carp, chub, roach, and dace. Among the London anglers, we think it is in more common use in the Lea than in the Thames, which perhaps is owing less to its extreme lightness of texture than to the cupidity of the puntmen who usually accompany the angler, and are very frequently allowed to find ground bait for him, for which they make a charge; and as a shilling or eighteen pence for bran and clay will pay better than two shillings or half a crown for bread and pollard in sufficient quantities, so bran and clay are usually recommended; and, for reasons before stated, these are perhaps sufficient for ordinary fishings: but a meal ground bait is certainly the most attractive to the above fish, and where much is expected, much must be done to deserve it.

3292. *Mr. Salter's method of making this ground bait* is one of the best, and agrees with our own in essentials. He says, "For a day's angling a quartern loaf is necessary, the crust of which you will cut off, the

crumb to be cut in slices about two inches thick, and put into a pan, or some deep vessel, and covered with water: when the bread is quite soaked or saturated, squeeze it nearly dry; then add the bran and pollard by handfuls, equal quantities of each, and knead them together similar to making bread, until the whole is nearly as stiff as clay. In making this ground bait, it requires some labour and time."

3293. *The qualities of this ground bait for cleanliness*, and its tendency to attract carp, roach, chub, dace, and bream, will however amply repay any trouble in the making of it. It is to be observed of it, that it is more particularly calculated for groundbaiting still deeps, or very mild currents, it being neither heavy enough to withstand rapids, nor will it, from its solvent properties, bear a stone well within its masses. The best ground bait is that, in every situation, which remains stationary, and dissolves slowly.

3294. No. 3. *Take barley meal one part*, mashed potatoes three parts, and stiff, clean, adhesive clay or marl two parts; work these well together, and they will form a cheap and excellent ground bait for almost any waters, and for all the usual fish for which ground bait is used. We have found it useful in bream fishing in Dagenham Breach; but the following still more so:—

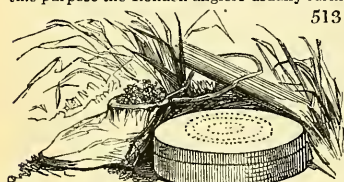
3295. No. 4. *A very useful ground bait* for rivers with still deeps, where fish of almost every variety abound, as in some parts of the Trent, the Severn, and the Wye, may be made as follows.—Mix with some stiff clay as much coarse pollard as it will bear without destroying its adhesiveness. If well worked, it will retain its tenacity with an equal weight of meal nearly. At the water side, separate pieces about the size of a goose-egg, into which stick a few worms and a few gentles. As these escape from the dissolving clay, they are seized on by the fish, who continue to wait in the expectation of more, and are thus ready to take the angler's bait also if it show a more tempting appearance than the other. It will likewise add to its good qualities if some well soaked greaves be mixed with it. From long experience, we can recommend this ground bait strongly, as a most excellent one for the still deeps of very large rivers, where carp, tench, perch, chub, barbel, roach, dace, bream, eels, and gudgeons, may perchance be all congregated by it. For we have, in some of these rivers, known nearly every one of these varieties taken within the space of a few hundred yards. As a professed barbel ground bait, it is also very good, and will admit stones within its balls readily if it be sufficiently worked.

3296. No. 5. *Barbel ground bait* is likewise made of soaked greaves with clay only, and from its tenacity and its admitting of being thrown into the water in large lumps of three quarters of a pound, it is particularly adapted to barbel punt fishing in the Thames deeps, with greaves for a hook bait.

3297. No. 6. *Mixtures of boiled or scalded malt, barley, wheat, &c.* are good ground baits for carp, tench, chub, and bream. They should be united with coarse sand, which helps to sink them, and increases the effect also. This variety is particularly applicable to meres, fleets, and large ponds, which are principally stocked with carp, tench, and bream.

3298. No. 7. *Worms cut into pieces*, and gentles with the dust, or rather minute fragments of greaves, all mixed together in sufficient quantities, form a tempting ground bait for carp, tench, chub, barbel, &c. Add to them double the weight of wet sand, and throw the whole in by small handfuls at a time. This ground bait, like the former, is only adapted to still waters.

3299. No. 8. *Gentles are sometimes used alone*, or at least are only accompanied by wet sand to sink them. For this purpose the London anglers usually furnish themselves with what are called carrion gentles, procured from the horse killers, fellmongers, and great melting houses.



GENTLE BOX.

These gentles are green or unripe; they are also unscored, and smell rank, consequently are not so readily taken by many fish as those which are scoured, ripier, and brighter. Our cut (fig. 513.) shows the gentle box, which is considered to be filled with them, and is accompanied with a bag of coarse sand. It is thus, therefore, that when the former are thrown in as a ground bait to draw the fish together, the latter (*i.e.* the well scoured) being let down amongst them, although on a hook, are preferred and readily taken. For a day's fishing a quart or two of carrion gentles will be required, and should be cast in with judgment, so as to reach the spot fished on their descent. If this caution be not observed, they may do harm instead of good, by inviting the fish to the distance that the stream may have carried the gentles.

CHAPTER VIII.

BOTTOM FISHING.

3300. *Bottom fishing is an angling phrase*, like many others in the art, by no means over definite. Conventionally it is understood by many to express such anglings as are practised below the surface of the water with a line and float, whether the bait touch the ground, or whether it be several feet above it. By others it is considered as more expressly signifying angling with or without a float, provided the baits are sunk so low as to trail on, or are close to, the ground. Our treating of it will be in its most comprehensive sense; our instructions will be general also, and applicable as well to the more unusual practices without a float, as in barbel angling, and also to the more common method. *Straight-corking* is holding the float still, in a rapid stream, and is deadly to chub and barbel.

SECT. I. General Instructions relative to Bottom Fishing.

3301. *In this amusement are required implements or tools*; baits to allure; craft to display them; and fish to operate on. Of the necessary implements called *fishing-tackle*, we have already fully treated. Our two last chapters described *angling baits* individually and generally; we now propose to offer some instructions relative to the *practice* of the art; and we will afterwards proceed in search of the *fish* to angle for.

3302. *A sufficient variety of fishing-tackle* on all occasions is the most important requisite, which we would press on the attention of the young angler. Success in any one kind of fishing is always a matter of chance: but total disappointment as regards sport very seldom occurs to him who is able to vary his modes of attack. Under this view such implements as may be wanted to meet a proposed change in his practice, should always be taken, whether the journey be long or short. Experience taught us to have recourse to a *card list* of these necessities to insure their being always taken: we shall present a copy of the one we so used, and leave it to the angler's choice to adopt, alter, or reject it altogether, as he thinks fit; only

remarking, that several good practitioners have acknowledged that the method had saved them many a disappointment. Persons who fish every day almost, have all their tackle in one place: habit brings all indispensable articles before them, and they muster themselves in the mind's eye, as it were, in angling array. Very different is it with the man of business, who wets his line but once a month perhaps, or not more than once or twice in a season. His tackle put by in the same hurry as when it was wanted, requires a muster-roll, or something is sure to be absent without leave.

CARD LIST.

Rod. Reel. Landing Net. Basket.

Lines (gut) with large cork flat—small ditto—swan's quill ditto, strong. Hair lines with tip—cap, and float. Paternoster line. Night lines. Spare gut and hair. Spare reel line. Hooks, naked—hair-mounted—gut and gimp-ditto. Split shot. Float-caps. Plummet. Coffin-lead.

Traces and hooks—minnow spinning, roving, and gorge-hook. Ditto, ditto, and ditto, for gudgeon. Snap-hook. Baiting-needles. Dip-lead. Devil-bait. Minnow-fly. Wax—waxed silk—waxed twine. India Rubber. Knife. Scissors. Pliers. Disgorger. Clearing ring. Gaff. Baits—bags—and boxes.

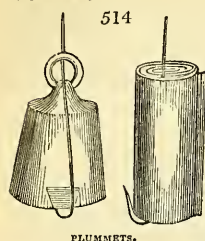
Small fly-book. Reel and line. Flies *ad libitum*. Fly-rod.

Sherry, Sandwiches, &c.

3303. The practice we have advocated of being furnished with a variety of tackle for enabling the angler readily at any time to change both the method and the object of the attack, was constantly pursued by ourselves, and it is that which laid the foundation of our list, of which the above is a literal copy, one of which was always to be found in our bottom fishing-tackle book. We framed it as an assistant to a treacherous memory, and with the exception of the drag-hook, we never moved for a single morning's fishing without the whole of the articles enumerated. Our fly-book, it is true, was not always called into requisition, but as it was very small it added little to the burthen. Its usual contents were a few bright palmers, and a few house-flies, which we could use by the help of an additional top to any rod in whipping for chub or dace; and when it appeared a doubtful point, whether the fish would take best under or on the water, we added others, and took our boy with us with a spare rod for fly-fishing, or we took our usual fly and dressing books as a part of our equipage. In vicissitudes of times and seasons, the angler, thus armed, may almost bid defiance to a blank account. Should the worm, gentle, and paste, wholly fail, the minnow can be spun, or the gudgeon can be exhibited; and if these also prove unsuccessful, the attention may be diverted to jack trolling. Perhaps all efforts under the water may be attended, as they sometimes are, with negative success; and this often for a very simple reason, because at those times the fish approach the surface to feed there; and it is now well if the angler be prepared to attack them. If he be but a novice in fly-fishing, yet the fly top of his general rod will enable him to treat the rising multitudes by whipping for them with a palmer, or an ant, or house-fly; or with his usual rod he can dip with such natural flies as his observations point out as acceptable to the feeding fish.

3304. The articles which enter the card list, most of them, indeed all of them (that ever enter a book) can be collected and carried in one pocket-book purposely made to receive them, and for the information of the young angler we will describe it. The case part contains the usual boxwood line-reel, but the central portion, instead of having one row of box-like cavities, has two, by which the artificial minnow, the minnow-flight, and other matters, can be kept free from pressure in one row: the usual apparatus, as split shot, float-caps, bored lead, folding plummet, wax, &c. &c. in the other. The reel compartments are adapted to hold two cork and two quill-floated lines. A strong leathern leaf exhibits the minnow and gudgeon tackle for spinning or trolling, with needles, disgorger, &c. &c. on one surface; while the other affords a pocket to receive swivel traces, spare lines, gut-hooks, silk, &c. &c. The portability of angling apparatus is the next consideration, and we will suppose our angler furnished with the requisite tackle for bottom fishing: his baits arranged; his worms in wet moss, with the smaller sorts distinct; his gentles scoured, or his bread ready to knead at the water's edge, provided he intends to fish with paste. We will take it for granted, that his ground bait also is prepared; but how is he most conveniently to carry it is the question? Mr. Daniel recommends an apron (from his old oracle, the *North Country Angler*), something like a fish-woman's, which in different compartments shall hold worms and ground bait, &c. &c. The custom of dangling the worm-bags at the button, which Mr. Daniel is so severe upon, we apprehend is the best after all, for in the pocket or the basket they are apt to be pressed. We, however, recommend the apron, if the angler is likely to be confined to one situation, as a very convenient article, particularly in punt fishing.

3305. *To plumb the depth* is the first operation after the ground bait has been thrown in (fig. 514.), and the rod and line have been mounted according to former instructions.



PLUMMETS.

Mr. Salter directs that the line and plummet be first used in ascertaining the depth, and that then it be suffered to remain in the water, while the ground bait is in preparation and cast in, by which time, he says, the line will be softened. This is spinning fine, but it is true; and it is better to spin instructions too fine, than to omit them altogether. In groundbaiting let the pieces be small if the water be still, and large if it be a strong current; and repeat it as the biting slackens. But to return to our diverging point. Unfold about two inches of the plummet, if it be a folded one, and within it inclose the point of the hook, the shank being without; close the fold, and the plummet will be then fast secured to the line. Now lower it down to the bottom of the water, without slackening the line; and having remarked the extent of it that is wetted, affix the float, so that its top shall be even with the surface of the water. Again, lower it down to try its exactness before the plummet is finally removed. To place the bait critically as to depth, is a matter of much consequence in true ground angling, so that every circumstance which is likely to interfere with, or alter it, should be attended to. In tide rivers, where the depth of water is liable to continual variation, it is very necessary to repeat the plumbing frequently, for with those groundling fish which feed at the bottom, a bait elevated only half an inch above the surface of it will almost to a certainty be refused. It is thus that while punt angling for gudgeon in the Thames the experienced fishermen recommend frequent plumbing, and the moment the gudgeon relax their biting, they either rake, or plumb, or both. In the Thames this is particularly done; for even where the tide has no effect on its waters, flashes, as they are termed, of water are continually coming down from the opening of locks and sluices above, which produce a temporary alteration in the river's depth. The unhatching also of mill-races, and the falling of showers some miles above the stream fished in, may produce a trifling change. In canals, and in such waters as communicate with them, the opening of locks occasions continual variations in the height of the water, of which the angler should be careful to inform himself, by now and then taking the depth. An alteration in the water length of the line itself will sometimes take place by the shifting of the float, which by repeated immersions, if not previously secured, may be forced up the line, and thus bring the bait to drag on the ground. This might be prevented by a half hitch or two of the line around the top of the float.

3306. *A plummet* is not absolutely necessary to ascertain the depth when a shotted line is used, though it is always convenient and desirable. If there be a moderate quantity of shot to a line, on immersing it the float begins to recline a little as soon as the shot reach the bottom, the gravity of the lead no longer acting on the resistance of the float. This being observed, the intermediate space between the shot and the cap of the float gives the measure of the water. If the float, therefore, be moved downward as much as the space which exists between the shot and the hook, the depth is then plumbed correctly enough for ordinary purposes, but by no means for regular ground fishing.

3307. *A ring plummet* is more applicable to strong currents, where the force might carry the folding one along with it: to use this, pass the hook through the ring, and fix the point into the cork at the bottom. Even this, however, is sometimes insufficient; and it is not amiss, therefore, to be furnished with a barbel lead, which by means of a loop will make a plummet sufficient to stem any current the angler usually fishes in. It is a great error to suppose that, "when your float stands upright, you are off the bottom." It is by no means the case; for your float may just have water enough under it to keep the lowest shot touching the ground, while it may be kept erect by the others above it. Having found the exact depth at which your float begins to recline, it is necessary to draw it down your line, as far as there is distance between the uppermost shot and the bottom of your hook. By this means your bait will just trail upon the ground, and in this fashion is peculiarly acceptable to many fishes, especially roach and gudgeons, and almost equally so to barbel, &c. Remember that strong currents often require very powerful weights to sound with. In such cases we always use the clearing ring.

3308. *Baiting a hook with worms.* The ground bait being thrown, the rod and line mounted, and the depth accurately plumbed, it becomes necessary to *bait the hook*, which we will suppose to be done with a *worm*, or worms. When one only is used, enter the point of the hook at the top of the worm's head, and carefully draw or squeeze its body round the bend, and over the whipping, by means of the finger and thumb of one hand, while the forefinger and thumb of the other are employed in pressing the hook on wards, until less than half an inch only of the tail part is left, which should be directed within the curve of the bend. If too much of the worm be left unattached it entices the fish to suck at that, and tease the angler with continued nibbles; till at length, on raising his hook, he finds this portion gone, and the point of the hook exposed. To the careless angler this happens continually. If too little be left, there does not remain enough to attract the fish by the motion in the worm. It had always been our own practice to attempt to direct the projecting portion of the worm within the bend, and one of our first lessons in worm fishing was never to let the tail project outwards from the point of the hook, that the fish might not rip the bait away, so as to bare the hook down to the bottom of the bend.

3309. *To bait with two worms* is the most alluring practice of any for the voracious tribes, as trout, perch, and eels; while one, on the contrary, well put on, unless the worms be very small, is perhaps best for roach, dace, and gudgeon. In baiting with two worms,

proceed to place the first as already directed, but allow it to remain above the arming until the second worm is penetrated by the hook, not at the head but near the tail, threading it up, and turning a small portion only of its head within the bend of the hook. Lastly, draw down the first worm to meet the second.

3310. *In baiting with the dew or lob-worm*, enter the point of the hook a very little below the head, and carry it to within half an inch of the tail, burying the whole of the hook within the worm. We have, when the worm has been unusually large (which is a very tempting bait for large trout and barbel), passed out the hook a little short of the centre of its length, and have again entered it about an inch below, and carried it along the remainder of the hook, leaving the folded portion pendent. The barbel has by no means a large mouth, yet by sucking it can take in a very large worm, and we believe that the general result of barbel fishing shows that they are particularly enticed by a large bait: perhaps we might also include large trout with the barbel in this respect. A very long worm is not, however, a desirable bait for any other fish, unless it be very thin, when it may be put on as directed above. In all other cases a worm whose length exceeds the linear measurement of the whole hook rather more than one half, is the most convenient for baiting, and the best for expedition. For as in our opinion fish never willingly take dead worms, so when one is exhibited crumpled up and wrinkled, or torn or crushed, we suspect it is refused because it is supposed to be dead. It ought, therefore, to be the aim of every worm-fisher to show his worm lively, by allowing it some motion, and to exhibit it as healthy also, by avoiding to tear or unnecessarily pierce it; yet it should be kept so compact on the hook, that the fish shall not take any of the former without taking also the whole of the latter.

3311. *In baiting the hook with bloodworms*, much delicacy of finger is required to place them so as to cover the hook without mangling the worms. Our own plan was to pick out the largest we could find, having first selected a fine wired hook. On this we carefully threaded the greatest portion of the worm, carrying it high upon the arming, which should be always of red silk. About a quarter of an inch of the first worm we left pendent, with that part directed towards the back of the shank. We then inserted the hook through two portions of the second worm, leaving a quarter of an inch hanging on each side of the hook a little below the former. Lastly, we covered the barb and the bend with another large worm, the tail part of which we allowed to protrude a little also, but directed inwards. If bloodworms be so baited the method will be found the most killing possible; and the little trouble it takes to show them thus, will be amply repaid by the success which will follow. Carp will take them as a bait thus put on, and they will do it when they appear not likely to be tempted by any other. The same may be remarked of dace and chub, and particularly of gudgeons; salmon, trout, perch, and barbel, generally prefer the larger varieties of worms.

3312. *To bait the hook with gentles*. Unless the hook be very small, two or even three are requisite. With three insert the point of the hook into the gentle close to the head, or more bulbous end, and bring it out near the tail: now take a thin green gentle, and pass the point directly across the body, and then put on the third exactly as the first, except that, *having just shown the point of the hook through the skin of the gentle, retract it again*. For the latter hint we were indebted to Mr. Salter, and a very good one it is; for, as he justly observes, the skin of the gentle being somewhat tough (especially in cold weather), by piercing the skin in the first instance an opening is made, by which the finest stroke (where a bite does occur) will enter the hook sufficiently into the fish to secure it, and you do not risk breaking your line, or the top of your rod, by striking too hard. One gentle on a No. 10. or 11. hook will often succeed when more are refused, and the fish shy. The gut should be *shaved*, at the end, to arm this hook.

3313. *To bait with a gentle and wings*. The angler will sometimes find, while he is roach and dace fishing, that as the day advances towards its meridian, the roach and dace he may have been hitherto taking with success, will gradually leave off biting, and from the bottom will show themselves above, the dace at mid-water, and the roach but a little below the surface. This circumstance will afford him an amusing opportunity of varying his practice by mounting on a gentle hook, No. 8. or 9., a pair of wings. A brownish handrail wing-feather is the best to use. After the wings are on, cover the rest of the hook with a tough well-scoured gentle; whip with this, but not violently, and dace will rise eagerly to it. It is more than probable that roach will take it best when it is sunk some inches, or even a foot or more, below the surface.

3314. *Of striking and playing the fish*. When we find that our own opinions coincide with those of able authorities, who have expressed them much better probably than we could, we deem it the fairest way to let such authorities speak for themselves. We therefore give place, in this instance, to the argumentative observations on "striking and playing a fish when struck" by Captain Williamson, who says, "By striking, we mean the act of drawing the line tight when a fish is at the bait, in such a manner as may cause the hook to penetrate into some part of its mouth, and prevent its escape. To judge accurately as to the moment when you should strike, is acquired only by observation and experience; and the degree in the force and the manner of striking depends much on the nature of the fish supposed to be at it, its size, its strength, &c. &c. Strike rather quickly than violently, and not from the arm but from the wrist. When we consider the elasticity of the rod in conjunction with the tenuity of the line, and when we reflect that the smallest change of position at the butt of the former will cause an immense difference in the situation of its point or tip, and if we call to mind that not more than half an inch of hook is in the fish's mouth generally speaking, and that if that half inch pierces its mouth,

our object is effected, we shall then see the impropriety of those strong uplifted pulls which many, even of those who think themselves good anglers, exhibit when they have a bite."

3315. *That the stroke should be made from the wrist*, is a very just observation of Capt. Williamson. "Under the supposition, that there be no impediment in the way of the rod's action; that the line can be drawn and kept nearly straight, from the tip to the float, without causing the latter to vibrate or be displaced; then a very slight turn of the wrist will cause sufficient removal of the tip, and consequently of the whole line, to make the hook take effect. The elasticity of the line will cause a kind of secondary motion, such as tends to fix the hook, and to make the fish instantly attempt an escape."

3316. *Never strike with the line slack*: nothing can be more unsportsmanlike, nor any practice more likely to mar the contemplated capture. If there be advantages in striking from the wrist (and fishing is badly conducted if it be not so done) a slack line does away with them all. A moderate stroke only with a loosened line acts unequally on the resistance, and thus very frequently snaps it in two; and the time required to give the impulse through a tortuous line unequally extended, is such as often to defeat the purpose of hooking the prey by conveying a previous alarm to it: this is particularly the case with the fine biting fish, as roach, dace, &c. With all this caution, observe that time must be given for some fish not only to mouth the bait, but to swallow it. Capt. Williamson illustrates this after the following manner:—"Let us suppose that a perch should seize your live bait suspended to a cork float, and carry it down; as in such case time must be given for the fish to gorge or swallow the bait, it follows that your line must be slackened, or be eventually let out from the reel so judiciously, as not to let the perch feel any check while in the act of swallowing." Under all circumstances, whether you succeed or not, examine your bait when a fish has been at it. On most occasions of the kind it is best to feel, as it were, first, whether the bait be gorged (which is done by the above means), and if you find it to be so, which the heavy bearing of the perch will sufficiently indicate, then a very slight turn in such direction as may be the reverse to that in which he is proceeding will have the desired effect. The learner must not suppose that any time is lost in such operations: they follow as quick as thought; and their appropriate adaptation to the moment not only decides the fate of the fish, but evinces the ability of the angler.

3317. *A quick but fine stroke is also necessary in some cases*. "Many fishes must be struck at the least nibble, while others must have some seconds allowed them. One will take the float scarcely half an inch under water before he has the bait fairly in his mouth; while another will merely take a slight hold of some pendent part, and carry the float one or two feet, or more, below it. In such case they are sometimes hooked on the outside of their mouths." Our author is certainly correct in this account of the biting of fish. The roach and dace are among the finest biters; the chub and carp, also the tench and the gudgeon, are irregular, now quick, now slow; the trout and perch are usually quick, and often violent in their taking of the bait: but the several modes of seizing their prey will be enlarged on with the descriptions of the individual fish. "When your bait is on the bottom, and a fish runs with it, drawing your float along the surface, sinking in very little or perhaps not at all, the line should be drawn straight from the tip of the rod to the float, and when you strike, observe the rule already laid down, of striking counter to the fish's course."

3318. "*It is necessary always after a bite to examine your bait*, which seldom fails to be deranged, more or less, by every attack that it sustains. I have seen anglers too lazy to do this, they being in the habit of leaving all to chance, when, after sitting for half an hour or more without a bite, in drawing up to remove to another spot they have been greatly surprised to see their baits half eaten away, and the hook two-thirds bared; yet they expected to catch fish."

3319. *Playing the fish after striking*. As soon as a fish is struck and hooked, if its size should be such as not to warrant your drawing it instantly out of the water, give him line in proportion to his exertions, by either his weight or resistance: but this must be done with great caution; for, as observed by Capt. Williamson, it is often more prudent to run the risk attendant on a short line and little scope of play, than to allow such a range as would enable the fish to dash among weeds, boughs, piles, or any thing likely to create difficulty. Giving line is not always practicable, especially in foul waters overhung with wood; and in such situations the largest fishes are usually found." Be cautious of urging the fish to his utmost exertion by over resistance, and always withdraw him gently from the baited hole, so as not to alarm his companions, and thus ring the knell of your future sport.

3320. "*As the elasticity of your rod and of your line afford you considerable advantages*, your study should be, always to keep the former in such position as may effectually combine the powers of both. This is done simply by keeping the point of your rod raised, so that it may bend, and by its spring gently yield to the efforts of the fish, and draw him back to his proper degree of pressure on the line, when his effort has ceased."

3321. *Some other niceties in float angling* are now to be attended to; and particularly we must press on the notice of the beginner, that without a proper regard to the length

of line admitted between the water and the rod, or, in other words, between the angle which the rod and line make with each other, his success will be doubtful. In all waters, but more particularly in rivers, when you are bottom fishing for chub, roach, dace, bream, and gudgeons, observe to have no more line between the float and the top of the rod than will allow of a quick but fine movement of the wrist, to operate instantaneously on the hook below.

3322. *With regard to the proper length* to be allowed between the top of the rod and the water, no certain rule can be prescribed; for it must depend on the station of the angler in reference to the surface of the water below him. If he be fishing from a high bank, it is evident, that were he to dip the point of his rod within two feet of the water, it would be fatiguing to himself, and a wrist-stroke from such a position must be an act of too much effort to be consistent either with the quickness or fineness required. But if he be placed on a level nearly with the water, the length of line between the float and the point of the rod should be rather less than more than two feet and a half. He must be careful also to carry the top of the rod exactly with the progress of the float, and directly over it, so as to keep the line perpendicular, and, as before directed, with such a degree of extension that the line may never be slack. The rod, the line, and the float should move uniformly together; by which means the angler will be enabled the instant he perceives a bite, by a quick but only slight wrist-motion, to fix the hook in the mouth of the fish. It is for want of strict attention to these matters that young anglers secure few fish out of many bites. Time is lost in striking, and thus the fish discovers the cheat and throws out the bait.

3323. *When a fish has been unsuccessfully hooked, and breaks away*, it also happens that if his struggles are violent, he will almost to a certainty alarm his fellows, and it will be in vain to expect sport at that spot for some time. Our own practice in such case has been to quietly drop in a few loose worms or gentles, and also a few small balls of ground bait, and then to steal away to another part of the water. In the meantime the fish have again congregated, and finding no interruption or reason for alarm, their confidence has been restored, and we have again renewed our fishing.

3324. *The fish being successfully struck is in proper time landed*, the methods of doing which vary very much. From an elevation the landing hook is a very convenient assistance, either the rod (a), or the telescope (b, fig. 515.). Avoid, however, any premature effort to land a fish. The tyro in angling is too apt



to be anxious to look his prize in the face, which is a dangerous experiment on a fish only half spent. Fear gives energy to its last efforts, and its struggles may tear away the hold; or it will often make a wily attempt to escape by first slackening the line, and then running in on the angler, when, taking the advantage of its situation, it will double itself and strike the line with its tail, so as to break it, or otherwise tear out the hold on it. In every case, therefore, keep a tight line, preserve a necessary patience, and never land a fish of any tolerable size until it be completely exhausted. Full directions for landing a fish under every variety of circumstance have been already given, with the description of the landing net and the gaff-hook. One other useful hint presents itself, which is, that in bottom angling, after it has been prosecuted some time with success, it often happens that the fish suddenly cease to bite, in which case there is reason to expect that either a large jack, perch, or trout of some magnitude, has made its appearance among them, and frightened them away. The usual practice in such instances is to take some nice strong tackle, and put any small fish alive (a minnow, if it is to be got) upon the hook, by sticking it through its upper lip, or back fin; if either pike or perch be there, the bait will be taken. An equally effective method, and one that will prevent a total cessation of the pursuit, by changing the tackle is, to have a trimmer or two, which may always be applied advantageously, and will soon clear the place from these intruders.

3325. *Fine tackle in bottom fishing*, be it especially remembered, tends much to the success of the sport. The angler who uses fine tackle or single hairs in clear and large waters, and conceals himself, will take five times more fish than he who fishes coarse or in sight, especially if the former have a reel on his rod with a running line. The *foot-link* the angler should be careful to suit to the water: the colour of the rest of the line is immaterial in many rivers, when full without overflowing: an amber foot-link, free from chalky white, or knitty specks, is best when the water is low and clear as crystal.

3326. *Practical directions* with regard to angling stations, seasons, and the weathers favourable to the sport, have already engaged some attention (p. 996.); we may, however, with propriety give a few additional hints at the outset of our initiatory instructions. As regards angling stations a general remark may be offered, that in all still and confined waters fishing requires less nicety in every one of its operations than it does in rivers. The baits need not be so varied, nor so highly scoured; nor is it so necessary to use ground bait. Pond fish, likewise, will take at all depths; or at least a great exactness in this respect is less requisite here than in river fishing, where it is hardly possible to be too critical or too attentive, not only to this but to various other minutæ also, particularly in such parts as are much frequented, where ground baiting renders the fish nice, and disturbance makes them wary. Some fish are to be looked for on gravelly bottoms, others on oozy or clayey soils. Barbel, chub, roach, dace, and gudgeons, prefer the former; and

those spots which are the most truly sandy and gravelly, are usually the most furnished with them. Carp, tench, and eels, may be sought for in ponds. Jack, bream, carp, tench, perch, and eels, will live and thrive in lakes and stills with oozy bottoms, particularly if assisted by a spring of water within or near them. Trout cannot be expected but in running waters: the larger have commonly one settled spot in which they fix themselves, such as the tail of a weed-bed, in a deep pool where an eddy whirls the water around, under the overhanging race-boards of a mill-wheel, &c. &c.

3327. *As regards seasons* it may be well to observe, that in winter fish usually lie deeper in the water than in the summer, and are generally more sluggish and unwilling to bite: but they are also less likely to shift their situations in that season than in summer; wherefore, having once found them, one is almost certain to meet with them again in the same place whenever he looks for them. The middle of the day should be chosen for winter angling; but the mornings and evenings yield the most sport during the summer months. If, however, the weather be warm and lowering, fish will often bite during the whole day, but not if the clouds are charged with thunder. The waters are apt to be very low in July and August, and fishing must then be conducted with considerable skill, the brightness of the water at such times allowing every deception to be seen. The use of very fine tackle, and great care to keep out of sight, are now doubly requisite. The grey of the morning and evening twilight offers the best obscurity, and the best chance of success under such circumstances. A heavy rain-storm, by filling the river, and bringing down some fresh water, will revive the angler's hopes; and he should now sally forth, as he may expect sport among all the grounding fish.

3328. *As regards weather generally*, from what we have just remarked it may be gleaned that heavy rains will prove ultimately beneficial, particularly if they thicken the water; but during their immediate continuance fish seldom bite. A mild drizzling rain will often insure amusement on a very hot day. Thunder-showers stop all biting, but when they are over, fish return to it with double gusto. The fine evenings of wet days are, for this reason, productive of the best sport: in fly-fishing this favourable change is a prelude to excellent diversion. Carp, tench, and bream, in still waters, are particularly likely to bite during a slight rain, and always after it. When rain has filled the rivers the angler should principally try the sides of the stream and its eddies; but when a drought prevails, fish the middle of the stream, and its deepest currents. Sunny weather is not favourable to fishing; and when it is practised take care that neither your own shadow, nor that of your rod or line, falls on the water.

3329. *Do not hesitate to angle in any wind, if intent on the business*: fish will occasionally bite in all, provided they are not too cold. That from the east or north is certainly unfavourable, but fish may be taken during either of these winds by angling in spots sheltered against the blast. Dead calms sometimes occur in July and August, when the air is so sultry as to lull all nature into seeming repose. Anglers, obey the call, nor worry yourselves by fruitless efforts to tempt the fish which are then *above* temptation, though, to pun on it, they may be said to be rather *below* it. Wait on them at their supper-time, and breakfast with them before or by sunrise the next morning, and you shall not labour in vain, particularly if you leave a little ground bait behind you as an earnest of your intentions.

SECT. II. *Still Water Angling.*

3330. *Still water angling* next claims our attention; and we, having accompanied our reader to the *moving* waters, will now introduce him to the *still* also, be they of the pond, the canal, or lake, in all which some variations in his practice will be necessary to insure success. The immense sheets of water in some parks, the vast lakes, the extensive broads of some localities, and the meres which are found in some others, all yield fish in plenty and variety; and, consequently, still water angling deserves our full attention.

3331. *Still water fishing* is too apt to be held in light estimation among those who consider themselves professed anglers. As the difficulty of conquest ennobles the achievement, so the angler derives among his fellows little credit from the well filled pannier drawn from such sources; for the fish which inhabit still waters are much less liable to disturbance than those of rivers, their enemies are fewer, and consequently their resistance small: their food, though less nutritive, is yet obtained without address or the exercise of much exertion. They are altogether tamer animals, and take the bait, therefore, with little reluctance, give themselves up without much opposition, and consequently are considered as rather fit for the initiation of young anglers, or as furnishing a meal for the pot-fisher, than fitted to wreath a laurel for the brow of the professed artist.

3332. *The fish of still waters* are generally paler in colour, of a more lengthened figure, and their heads are usually large in proportion to their bodies, as compared with the fish of rivers. Thus considered, we need not be surprised that they not only yield less sport to the angler, but also that when taken they are of less worth to the eater. The relative properties of still waters, as connected with the qualities of their fish, are however greatly

dependent on the source from whence they are derived. If they are fed by springs which arise within them, and their waters are carried off at an outlet; or, if furnished by means of a feeding stream, however small, that runs through them, the value of their fish is greatly increased, and even the varieties also. In either of these cases even trout will live, and gudgeons will thrive. Chub likewise, which are more properly a river than a pond fish, will nevertheless attain some perfection here. Two large ponds on the summit of a range of hills in the neighbourhood of Guildford, where we have fished, contain trout, and both are furnished with water from central springs only. Flood waters, which overflow flat lands, and finally rest in some hollow, as that of Dagenham Breach, have usually a large quantity of fish in them swept from the upper grounds; and as the same means by which the fish were brought have also poured in food, so these fish thrive and multiply. Such waters have another advantage, inasmuch as they have always an outlet, commonly by flood-gates, and thus the fluids are changed.

3333. *The usual contents of ponds, &c.* are tench, perch, bream, roach, carp, and its varieties; dace also, with gudgeons and eels. In very extensive waters, pike and jack are found, but in small sheets or ponds they are seldom allowed, as from their voracity they soon destroy every thing around them, except tench, and hunger, we scarcely doubt, would force them to devour these also; otherwise they mostly escape attack.

3334. *In pond angling little ground bait is necessary, and few use any at all.* However, if the water be extensive, we can see no reason why it should not have the same effect here, both as to drawing the fish together, and detaining them when so collected, as in rivers. We have found it so; and in using ground bait in Dagenham Breach, three of us collected such a quantity of bream around us, that we took in one afternoon's fishing a stable-pailful of them. In such places, however, a boat is almost indispensable. We must also observe, that the baits in such waters are generally taken best when near the bottom; and unless the water be very deep, it is but seldom that they bite so freely at mid-water. This is not invariable; it depends much on the wind, the weather, the time of year, and the nature of the fish.

3335. *The fly will be also taken in ponds.* There were three mill-ponds within half a mile of the spot where we resided in Hertfordshire, in which trout would rise freely to the fly, and where, although the natural minnow was never seen, they would take the devil-bait, or false minnow, readily. These ponds however, it must be observed, had a small run of water through them, but not sufficient to give much firmness or colour to the trout. It is also singular that no other fish of size or consequence were known to inhabit either of these ponds. Chub take the natural fly with avidity in such ponds as breed them, particularly if it be first thrown on a dock leaf, or by whipping, when a warm wind ruffles the face of the water. The worm however, as a general bait, is without doubt the most killing for fishing in still waters, and for every fish that is found in them. Worms are bred there in great quantities, and instinct causes them to be taken with much freedom.

CHAP. IX.

INDIVIDUAL FISH ANGLINGS.

3336. *We shall premise our account of the methods of angling for each fish by a popular sketch of its natural history, with its systematic characters as described by naturalists.* We had intended entering more fully both into the natural history and the systematic arrangement of fishes than our confined limits will now allow. We hope, however, to be able to throw some light on the general and particular history of these interesting animals, particularly of such as are objects of the angler's pursuit: these may be divided into those which remain always with us, being constitutionally fitted to live only in fresh water, and those which alternately occupy the salt and the fresh waters, and are from thence called fish of passage.

SECT. I. *The Stickleback (Gasterosteus trachurus Cuvier).*

337. *The stickleback, banstickle, or sharpling,* is, we believe, our smallest fish, but is very generally diffused, being found both in rivers and stagnant waters of every part of the kingdom. It is occasionally met with in such as are brackish also. In length it now and then reaches to two inches and a half, more commonly it is found rather less than two. It has large eyes, and a proportionally larger head; the body is full, and the scales of the sides are almost cataphracted or mailed. The back is furnished with three spines, which belong to the three species included in the *G. aculeatus* of Linnæus.

3338. *The lesser stickleback (G. pungitius)* is even smaller than the *G. aculeatus*, and remarkable for its more numerous back spines, which are from eight to eleven. It is also more scarce, and fortunately not so prolific as the three spined, whose numbers are such as sometimes to become a serious nuisance. There is a third also, of lengthened dimensions, but not very common. Small as this fish is, it is very injurious to waters by the amazing quantity of young fry it devours. In the *Philosophical Transactions* we are informed

by Mr. Henry Baker, that "It is scarce to be conceived what damage these little fish do, and how greatly detrimental they are to the increase of all the fish in general among which they live; for it is with the utmost industry, sagacity, and greediness, that they seek out and destroy all the young fry that come in their way, which are pursued with the utmost eagerness, and swallowed down without distinction, provided they are not too large;" and in proof of this Mr. Baker continues, "I must assert, that a banstickle which I kept for some time did on the 4th of May devour, in five hours' time, seventy-four young dace, which were about a quarter of an inch long, and of the thickness of a horse-hair: two days after it swallowed sixty-two, and would, I am persuaded, have eaten as many every day, could I have procured them for it." The lesser is not only distinguished from the other by its size, which is considerably smaller, but also by the number of its dorsal spines, which are from eight to eleven, instead of three, as in the former. The fecundity of the common stickleback must be very great, since, as Mr. Pennant informs us, it is occasionally obliged to colonise, and leave its native fens, in search of new habitations. The numbers are so immense in some instances, that they are used to manure the land, and trials have been made to obtain oil from them. An idea may be formed of their enormous numbers by this known fact, that a man employed by a farmer to take them for manuring his land, has earned for a considerable time four shillings a day by selling them at a halfpenny per bushel: a similar process was witnessed in the river Cam, where the sticklebacks were caught (with nets like large landing-nets fixed on short handles) by myriads, and applied to the same purpose of agriculture. There is one singularity in the spawn of the stickleback well worthy of notice, that the ova are bigger than those of the codfish. This little fish is the tyrant of the aquarium.

3339. *Walton's notice of the "sticklebag,"* as he calls it, is in keeping with his usual interesting descriptions:—"It is a little fish without scales, but hath his body fenced with several prickles. I know not where he dwells in winter, nor what he is good for in summer, but only to make sport for boys and women-anglers, and to feed other fish of prey, as trouts in particular, who will bite at him as at a pink or minnow, and better, if your hook be rightly baited with him; for he may be so baited as his tail, turning like the sail of a windmill, will make him turn more quick than any pink or minnow can." Brookes's account of the stickleback is somewhat in unison with Walton's. He says, "In the Wandie, where there are few or no white fish, gudgeons, or minnows, it will serve for a bait for a trout if you cut the prickles off, which I have experienced at Cashalton and Mitcham more than once."

3340. *Sticklebacks may be angled for with a hook, No. 13. or 14., baited with half a bloodworm, or a small piece of a red one;* and when caught, a use may be made of them not uninteresting to the lovers of Nature. They may be put into a vase, and kept easily for a considerable time. We saw some that had remained two years in a glass bowl, to which their brilliant colours gave beauty, as their fierceness in disputing for the tiny worm gave them animation. Where these fish exist in any great numbers, they may be given as food to poultry, to which they prove very nutritious, and it is said render them peculiarly prolific by their stimulating qualities.

SECT. II. The Minnow (*Cyprinus phoxinus* Linn.).

3341. *Blackish green carp,* with blue and yellow variegations, reddish silvery abdomen, and forked tail. (*Linn. Syst. i. 528.*)

3342. *The minnow, or pink (fig. 516.)* abounds in most of our rivers, as well as in most clear gravelly streams and rivulets throughout Europe. In shape and size they have one

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common character, but they vary much in colour, being sometimes rather blue than green, and the belly is often of a brilliant red, but is most valued by the angler when it is of a pearly white, and less so when yellow. Its scales are very minute, and the lateral line is straight and often gilded. It is gregarious and delicate, and is frequently infested with the *Tenia solida*; we have found *Ascarides* within it also. The minnow appears first in March, continues until Michaelmas, and then betakes itself to the mud, weed roots, or wood in rivers, to secure itself from floods and fishes of prey. Minnows are usually full of spawn all the summer (for they breed often), and quickly arrive at their growth and perfection. Although so diminutive in size, the minnow may be compared for the excellency of its taste to many of the best-famed fish: they are in some places made into *minnow tansies*; after being gutted and well washed in salt and water, their heads and tails cut off, they are to be put with yolks of eggs, well beat with cowslip and primrose flowers, and a little tansy shred very small, and fried in good butter: the sauce to them is butter, vinegar or verjuice, and sugar. The minnow tansies here noted are derived from Walton, and are not we believe much in use at present; but dressed in the same manner as white-bait, the minnow proves excellent, and also when fried in batter. In whatever way they are cooked, they are however found rather luscious and cloying to the palate.

SUBJECT. 1. To angle for Minnows.

3343. *To the young sportsman,* who has not possessed himself of the patience requisite to form the angler, the minnow yields plenty of amusement. They will in hot weather bite eagerly all day, and are frequently drawn out of the water from their adhering to the end of the worm, without being touched by the hook. The best way to catch them is to have three or four very small hooks, baited with the smallest red worm, or a bit of one, and a crow-quill float: fish deeper than mid-water, or near the ground in shallow places, in eddies, and at the sides of small streams.

SECT. III. *The Bull-head (Cottus gobio Linn.)*

3344. *Smooth yellowish olive bull-head*, variegated with black, beneath whitish; the head furnished with a spine on each side. (*Linn. Syst. i. 452.*)

3345. *The bull-head, or miller's thumb*, from the magnitude of its head, is a disagreeable object. Its mouth is very large, and thickly set with minute spiny teeth over the palate and jaws, by which it can prey on insects and young fish with facility. It conceals itself under the hollows of large stones, from whence it darts out on its prey: a habit which cannot but be familiar to the angler, who, when he has dropped a worm on a minute hook by the side of a large stone at the bottom of a brook, must have witnessed the rush made from under it at the bait by the bull-head.

3346. *To fish for the miller's thumb* we will call the venerable Walton into council, who thus directs:—"He does usually dwell and hide himself in holes, or amongst stones in clear water, and in very hot days will lie a long time very still, and sun himself, and will be easy to be seen upon any flat stone, or any gravel, at which time he will suffer an angler to put a hook baited with a small worm very near unto his very mouth, and he never refuses to bite, nor indeed to be caught, with the worst of anglers. Matthiolus commends him much more for his taste and nourishment than for his shape or beauty." We can affirm, from our own experience, that however unsightly may be the appearance of this fish, it is when cooked of a most excellent flavour. We once treated a London friend who savoured rather of the epicure with a dish, and his admiration was extreme; but his regrets were considerable, because they could not be bought in Billingsgate.

SECT. IV. *The Loach (Cobitis barbatula Linn.)*

3347. *Yellow grey loach*, with dusky variegations, small compressed head, and six beards. (*Linn. Syst. i. 499.*)

3348. "*The loche*" (*fig. 517.*), Mr. Daniel says, "is found in swift brooks among the gravel, or where there is a soil of mud and gravel together, with weeds, and in several of our rivers by the sides of sharp streams: it seldom rises to the top of the water, keeping at the bottom on the gravel, upon which it feeds, and is on that account in some places called the *groundling*: it is frequent in the stream near Amesbury in Wiltshire, where, out of frolic, the sportsmen swallow it down alive in a glass of white wine. It is little pursued by anglers, and is not a good bait when used: we shall not therefore treat



further on it here, than that it is a slimy fish without scales; its figure is long; its mouth small, toothless, but bearded like the gudgeon and the barbel, having on the upper mandible six small beards, one at each corner of the mouth, and four at the end of the nose; the body is smooth and slippery, and almost of the same thickness; the colour of the head, back, and sides is in some white, in others of a dirty yellow, very elegantly marked with large spots, consisting of numberless minute specks; the pectoral, dorsal, and caudal fins are also spotted; the belly and ventral fins of a pure white; the tail, where it joins to the tail fin, remarkably broad without any tapering; the tail fin is broad and rather rounded. One of the largest ever heard of by Mr. Pennant was four inches and three-quarters in length, but they seldom exceed three inches. The flesh of the loche is singularly nutritious, and from that circumstance, and its being equally grateful to the palate, it is recommended to the sick. The females during summer are generally full of spawn. These fish are to be taken with a very small red worm, the bait touching the ground. The loche is used as a bait for other fish, and for eels perhaps it is the best." It is an excellent night-line bait.

3349. *The groundling (C. tenia)* is another species of the loach, said by Berkenhout in his *British Fauna* to be found in lakes and ponds, and in the Trent also. Turton describes it as to be met with in the clear streams of Wiltshire. It is of the same size as the preceding.

SECT. V. *The Gudgeon (Cyprinus gobio Linn.)*

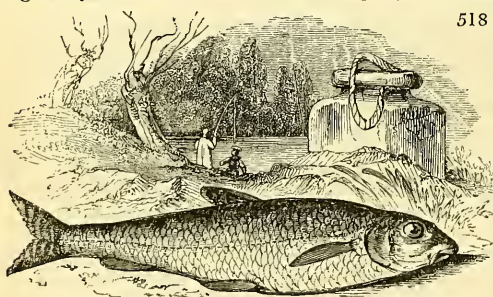
3350. *Silvery olive carp*, with the upper lip bearded, and the dorsal fin and tail spotted with black. (*Linn. Syst. i. 526.*) The gudgeon (*fig. 518.*) is a small but a highly-prized fish. It is pretty universally distributed throughout Europe, and is very common in our rivers, and in most of our still waters, and more particularly of such as have any run through them; but it is in greatest perfection, and in greatest numbers, in rivers of moderate current running over a gravelly soil. Those of the Thames and the Lea are sufficiently known to the London angler, and the astonishing numbers extracted yearly from these streams are sufficient proofs of their fecundity. Some anglers are of opinion that their numbers are accounted for by their spawning twice a year. Mr. Salter considers this as an error, and observes, "I believe they only spawn once, and that happens at different periods in different waters. As, for instance, gudgeon arrive in the Lea, and go a few miles up it, from the Thames, in the spring, and spawn in May; but the native gudgeons of the Lea do not spawn till after Midsummer, which leads to the mistake above alluded to." On this subject Dr. Shaw remarks, that the gudgeon generally spawns in the spring, and is not observed to deposit all its ova at once, but at distant periods, so that the spawning time lasts near a month. Our own observations neither refute nor confirm this, but they serve to convince us that the young fry make their appearance at different periods in different rivers; and that while the gudgeons of one water shall be found shotten, those of another will be in full roe. Captain Williamson observes, "I am much inclined to believe, that the gudgeon spawns both in the middle of spring and about Michaelmas,

especially at the latter time, when the young fry may be seen in shoals that darken the shallow sandy, or fine gravelly, bottoms, in which they greatly delight." Some waters, we are of opinion, are more favourable to the growth of gudgeons than others. We do not remember, in our wanderings, to have seen them so large in any river as in the Colne. Mr. Pennant remarks the same, and notices one caught near Uxbridge that weighed half a pound. He also praises those of the Kennet and the Mersey. Mr. Daniel states that he had some in a pond of his own so large, that their average weight was five, or at most six, to the pound. In some of the extensive waters of the distant counties they are also very numerous, and are taken by fishermen in nets, lullies, keils, &c. as much for the purpose of baiting for other fish, as for their own eating, or for sale. In Germany the gudgeon is said likewise to abound; and there, we are told, a smaller variety is also common, called wapper. The gudgeon exhibits a striking instance of the capacity which fishes possess of accommodating themselves to different climates. A wide geographical distribution of marine fish is little to be wondered at, because the temperature of the sea is nearly equal in different latitudes, while the water of rivers must correspond with the temperature of the atmosphere and soil through which it flows. It is a fact that gudgeons are found in Syria, as we learn from Dr. Russel (*History of Aleppo*, p. 35.); and that they are natives of Greece also, we may judge from the mention made of them by Aristotle (*lib. viii. cap. 19.*), confirms the extent of this capacity in them. The barbel are common to the Nile, which is also another instance. The gudgeon is easily kept, in the aquarium.

3351. *The figure of the gudgeon*, as seen in our cut, is rather lengthened, with a thick or sub-cylindrical body; but this figure is very seldom well expressed in the portraits of it, which illustrate our books on angling. We may probably account for this by the circumstance, that such portraits are usually taken from the fish when it is in full roe, at which time it assumes a rotundity unnatural to its general state, and which is well exemplified in the cut. In its true figure, on the contrary, it is slightly concave, or at least straight along the abdominal surface, and arched on the dorsal. From this we must exempt the figure which heads the article GUDGEON in Mr. Salter's work, where the true character of the fish is very well preserved, although that was apparently taken from one moderately or early in roe. The common habitation of the gudgeon is at the bottom of the waters in which it is found, for which reason it has been called in Germany the groundling, a name, however, more generally appropriated to the loche, a particular variety of it. We have, notwithstanding their pelagic predisposition, occasionally seen them swim, and even take a bait, at mid-water. On one particular occasion when this occurred, they were high in the water opposite a sluice gate; and probably it was to seek an exit that they thus quitted their native bottoms. The currents of moderate streams and of moderate depths are their common habitations. In winter they seek the deeper parts of rivers, &c. and lie close to the sandy or muddy bottoms, apparently to avoid the cold.

SUBJECT. 1. *To angle for Gudgeons.*

3352. *Gudgeon angling* is a favourite amusement with some persons (*fig. 518.*). Many anglers spend much of their time in angling for these fish in the Lea, and still more at



GUDGEON ANGLING.

518 what is popularly called gudgeon raking in the Thames. For gudgeon fishing in the Lea, many subscribe to stated localities, and *punt gudgeon fishing* studs the Thames during the summer months with innumerable aquatic parties. Of the fascinations of this branch of angling, Mr. Daniel furnishes us with an amusing instance:—"A clergyman," he says, "minister of Thames Ditton, who was engaged to be married to a daughter of the then bishop of London, overstayed the ca-

nonical hour, and the lady, justly offended at his neglect, withdrew her assent;" and we think he thus made a gudgeon of himself, as is too frequently done by many.

3353. *Gudgeon fishing in the Lea* is usually commenced towards the latter end of March, and is practised from the banks of the river; and in such practice the professed gudgeon angler would surprise a novice by the fineness of his tackle. His rod is of cane, his line either of fine gut, or more probably of single hair, with a light quill float, usually a tip-capped one. The hook is also as fine as the rest of the tackle, very seldom larger than No. 8., more frequently No. 9., and some prefer for very fine fishings, No. 10. even. The line must be finely shotted to agree with the rest. With some anglers a double line is used; but we think that whatever increase there may be in the numbers taken (and we have our

doubts whether they are really increased by this practice), it is truly at the expense of the sport. However, *chacun a son goût*. Some use two, three, or four rods at a time, and are seen dancing from one to the other, as though the ground were too hot to let them rest; or as if they wished to monopolise all the fish.

3354. *The most tempting bait for a gudgeon* is a worm, next to that a gentle or cad bait, and after that pastes. In some countries raw flesh is used for bait. It is prudent to be furnished with more than one sort of worms when engaged in this sport, and the brighter and more lively they are the better; observing, that in placing them on the hook there be very little left to hang from it, for these fish are great nibblers. Our reason for recommending a variety of bait is, that at some times gudgeons seem to prefer one sort of worm, and at others a different kind. Bloodworms are commonly acceptable; two of them should be put on the hook very carefully. Mr. Salter says they take bloodworms best in the spring, and the red worms in the advanced summer season. This may be the case, but in our own experience we have found that they will seldom refuse any kind of worm altogether; but that to the variety with which they are most tempted at one time, they are nearly indifferent at another. To fish systematically, allow no more of the float to appear above the surface of a gently-flowing water than possible, and strike quickly at a bite. In more rapid waters the float itself must be larger, and its tip must be more elevated.

3355. *That the bait must trail on the ground* is a general rule. To effect this, plumb the depth very accurately, so that the worm, &c., when on the hook, may trip along the bottom, suspended, but touching every little rising that presents itself: in fact, the bait in its action should represent a worm accidentally dropped into the water, which having sunk to the bottom, is afterwards carried by the force of the current gently along, and thus meets the eyes and mouths of these groundling fish. The situation in which gudgeons are most likely to be met with is that of a moderate scower, with a fine gravelly bottom, and of a moderate depth, at least, in summer heats. They frequent also what are called sharps, where a gravel patch elevates itself from deeper parts, and which by its inequality detains the edible matters floating along.

3356. *Raking*, or otherwise disturbing the ground, is an essential act in gudgeon fishing. In the great depths of lakes, and some rivers, a pole is used for this purpose, in others a long-handled rake is employed; and whenever any slackening in the biting of the gudgeons takes place, the ground is again disturbed. The rationale of the effect of raking is, that as these fish feed on the insects which harbour among the stones and gravel at the bottom of the stream, as caddies, various minute worms, water snails, &c. &c., by disturbing them with the rake they are turned out of their hiding-places, and instantly snapped up by the gudgeons. On plying the rake, therefore, the surrounding fish hasten to the spot, for the purpose of sharing the spoil, and, as they relax, their eagerness may be re-animated by a new raking, to meet a new supply. A moderate groundbaiting is also good in gudgeon fishing, wherever the extent of water will allow them to rove; and during the angling for them throw in sand and gravel, mixed with morsels of worms, gentles, bread, or sweepings, from the chopping of greaves, &c. If raking be omitted, and no other ground bait be used, still frequently throw in some gravel and sand alone, to excite the fish to rally around in the general stir of matter. Gudgeons often leave a spot and repair to another, apparently without reason, except in search of new food; it is therefore prudent, when the rake has been plied and ground bait cast, and when the gudgeons no longer bite, to try a new swim. Frequent change of place is advisable.

3357. *Fishing for gudgeons* in the Thames is usually practised by means of a punt, which is fixed across the streamy part of the river just above a tolerably sharp scower, running over a fine gravelly bottom, free from weeds, at depths varying from five to six or seven feet. As the eddy is greater generally, and the water deeper, in these scowers than in those of the Lea, so the tackle used is commonly somewhat stronger, and a fine gut line is more frequently met with there than one of single hair. Fine tackle, however, in a good hand, is to be always preferred; and we have seen many hundred dozens of gudgeons taken in the sharpest currents of the river Thames with a single hair only for the two bottom links. Punt-fishing for gudgeon in this river is a delightful amusement, particularly to the indolent angler, who is not inclined to take much trouble. The scenery, the quietude and safety from interruption, the cleanliness of the practice, where the bait is put on the hook by the attendant fisherman, and where even the prize it gains is removed by the same hand, all tend to make it epicurean in the extreme. But the thorough bred fisher is soon tired with it after this method, for the very reason that there is actually too much luxury in it to constitute true sporting, which must of necessity present some labour to keep up the attention, and some difficulty to enhance the value of the prey. In the Thames it is a fact, that even fifty dozen of gudgeons have been taken in a day; but in the Lea it is seldom that half that number are caught. Yet the Lea angler has the best scope for his sport, for he can commence it in March, whereas in all that part of the Thames within the liberties of the city of London it must not be attempted until the 1st of June, at which time the gudgeons have spawned, and continue for some time afterwards inferior in point of their gastronomic worth. Gudgeon fishing seems to have varied little from the ancient practice, and the angler who has aught of the antiquarian about him, will be amused probably at the close parallel between the present method and the gudgeon fishing of early times, as it is described by John Davers or John Denny, Esq., for it is a disputed point to

which of these worthies the *Secrets of Angling*, in which it is contained, owes its birth. Walton ascribes it to Davers, and gives the name at full length in the 5th edition of *The Complete Angler*. The entry at Stationers' Hall, February 28. 1612, has only J. D. attached to it, which has rendered the name of the true author uncertain.

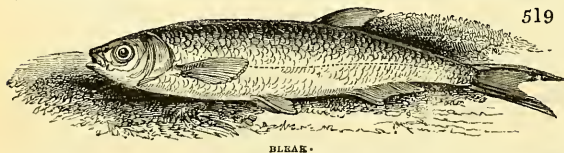
"Loe, in a little boat where one doth stand,
That to a willow bough the while is tied,
And with a pole doth stir and raise the sand,
Whereas the gentle streame doth softly slide,
And then with slender line and rod in hand,
The eager bite not long he doth abide.
Well loaded is his line, his hooke but small,
A good big cork to bear the stream withal.

His bait the least *red worme* that may be found,
And at the bottome it doth alwayes lie;
Whereat the greedy *gudgeon* bites so sound,
That hooke and all he swalloweth by and by:
See how he strikes, and pulis them up as round
As if new store the place did still supply;
And when the bit doth die, or bad doth prove,
Then to another place he doth remove."

3358. *The instances of gudgeon angling* we have described are sufficient types of the modes employed in all other situations where these fish are to be met with. We have fished for them in many rivers in Great Britain, and in the lakes of it also; but in all we have found the worm the most tempting bait. In both the Severn and the Wye they are very fine, but the nature of these waters requires rather coarser tackle, and the more so as the scowers in them are more apt to be disturbed by other fish, particularly by perch, chub, and trout, which it is necessary to be prepared for; and as the gudgeon has a large mouth of its own, when it is really on the feed, it will not scruple to take a large bait, and a tolerably good-sized hook also. Of the edible qualities of the gudgeon but one opinion exists, and has existed for more than a thousand years. It has been called the fresh-water smelt; and we have seen a display of gudgeons around a cod which have been passed off as smelts, and eaten as such, among the lovers of good living, without suspicion. These fish are in the best state for the table in the spring, or from March and April to May, for at this season they subsist principally on small worms, and the spawn of other fish, which they find among the small gravel they root up in the shallows; but as the weeds grow up, gudgeons leave the shallows after spawning, and feed a good deal on the weeds, which makes their flesh less firm, and in summer it is either of a bitter taste or else tasteless: they also then keep very badly, especially in extremely hot weather. Nevertheless, before their spawning in the spring they are unquestionably the best small fish, excepting the smelt, that the fresh waters produce. Epicures direct that they should be cooked in the frying-pan immediately, or a few hours after they are caught, and without being sealed or opened; for at this season gudgeons feed so clean that there is nothing in the stomachs to offend; therefore they require only wiping with a damp cloth, as is usually done with sprats; for by opening and washing you spoil them. We however, on our own account, beg leave to add, that we have eaten gudgeons with much relish when, after being gutted and split open, and wiped without washing, they have been dipped into a thin but rich batter, and fried. If the frying process be in fine olive-oil instead of lard, although the browning may not be quite equal, the flavour will be found improved.

SECT. VI. *The Bleak (Cyprinus alburnus Linn.)*

3359. *The silvery carp*. Olivaceous back, twenty rays in the anal fin, and the tail forked. (*Linn. Syst. Nat. p. 539.*) The bleak, bley, or whiting (*fig. 519.*) is so well described by



BLEAK.

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Mr. Daniel, both historically and practically, that we shall quote his account of it. "It is," he says, "ever in motion, and is by some termed the fresh water sprat; and although the Italian salt and skill

are wanting to give the true Gorgona flavour, yet by some artists the bleak, as well as the sea sprat, is substituted for the anchovy. The smallness prevents the angler from making this fish a particular object of his attempts, yet the taste is agreeable, and the flesh nourishing. The bleak is seldom more than six inches long; the head is small, and the skull transparent; the eyes are large, with a blood coloured spot on the lower side, the irides of a pale yellow; the under jaw the longest; the gills silvery; the body is slender, greatly compressed sideways, not unlike that of the sprat; the back is green; the sides and belly silvery; the fins pellucid; the lateral line rather crooked; the scales are large, and fall off very easily; the tail is much forked." Bleak are found in almost every river in the kingdom. In the Thames, Lea, New River, the Severn, Trent, and the Wye, they exist in immense numbers, but are seldom stationary, sometimes occupying one part of a river, and at others tenantry another: the deeps, the shallows, and the surface, alternately are their resort. This ubiquity has given them the name of *water-swallow*, which they further deserve by their nimbleness in pursuit of their prey, and particularly in the catching of flies. Their spawning time is early in the spring: the exact period varies somewhat in different rivers, ranging from the end of March to the end of April.

SUBJECT. 1. *Angling for Bleak.*

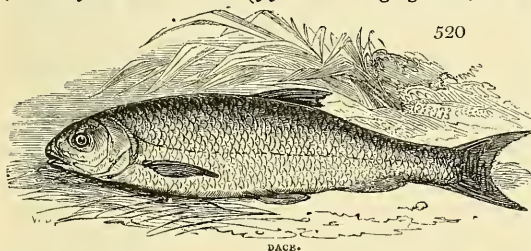
3360. *Angling for bleak is practised both by float fishing and whipping.* In float fishing the tackle should be very fine, such as is directed for taking gudgeons in the Lea. Those who fish for large numbers use three or four hooks on a paternoster line (*fig.* 484. p. 976.), which prevents the baits from interfering with one another. The baits, as gentles, blood-worms, caddies, paste, &c., should be sunk about mid-water in general cases: in warm weather they take higher, and in cold weather lower than this. Occasionally throw in some ground bait to draw them together, such as chewed bread, dried crumbs, &c., followed by a handful of gravel, sand, &c.

3361. *Whipping for bleak* is excellent practice for a young angler: according to Ausonius, the taking of these fishes was anciently the amusement of children, *Alburnos prædam puerilibus hamis.* It may be pursued at the sides of swift streams and the middle of very gentle currents, such as the New River, which abounds with them. Use a very fine hair line with a black gnat at the end (No. 1.), or otherwise mount one with a very minute gingerpalmer as a stretcher, and two droppers, one of which should be a black gnat, the other a blue (No. 50.). The natural house-fly is also an excellent bait for this nimble fish. It is amusing to see them in a cloudy warm day, or a bright summer's evening, leap out of the water after the baits that are offered them. (*See Fly-fishing and Whipping*, p. 1180.)

3362. *Bleak are not valued highly as a table fish*; they are not only small, but are apt occasionally to taste bitter from hepatic affections: their proneness to vermicular disease likewise unfits them for culinary purposes, if strong stomachs are not recipients. Notwithstanding which, in the spring and autumn, some persons are partial to them fried. We have seen them when thus dressed (having been first dipped in batter, and sprinkled over with a profusion of dried parsley, and that where good living was not a matter of indifference.

SECT. VII. *The Dace or Dare (Leuciscus vulgaris Cuvier).*

3363. *Yellow silvery carp.* Back olivaceous dorsal fin, the others reddish, and tail forked. (*Linn. Syst.* i. 528.) Dace (*fig.* 520) are gregarious, and herd together in large droves.



This fish is also known under the different names of dare, dart, shallow, and showler, in different counties, and is a great breeder, very lively, and during the summer is fond of frolicking near the surface. Its head is small; the irides of a pale yellow; the body long and slender; its scales are smaller than those of the roach, and it is, upon the whole, a handsome

fish; the back is varied with dusky markings, and a cast of yellowish green; the sides and belly silvery, the ventral, anal, and caudal fins are sometimes of a pale red hue; the tail is very much forked. The dace is seldom above ten inches long, although in a list of fish sold in the London markets, with the greatest weight of each, communicated to Mr. Pennant, there is an account of one that weighed a pound and a half, and, according to Linnæus, it grows to a foot and a half in length in some countries.

3364. *Dace are found in most rivers of England,* and in many standing waters also, which have any feeding current running through them. In those which are wholly stagnant they seldom live, and never thrive. They principally, however, inhabit rivers, and delight in their rapid currents, scowers, and eddies. The point of junction between two streams is a favourite resort of theirs, and at mill-tails they may be always found. In some weathers, particularly when it is very cold and windy, they are only to be met with in deep holes, more especially where there is a clayey bottom, with fine gravel over it. Though they resemble the roach much in their habits, yet altogether their haunts are more confined to streams than stills, while the roach is more favourable to stills than streams. Yet they are very frequently found together, the roach in the autumn being drawn by the rotting weeds into the streams and scowers, and dace in very warm sunny weather hiding themselves in deeps which are shaded by aquatic plants, or overhung by boughs. Under the spray or foam of a mill-race they think themselves secure, and may there be always looked for.

3365. *Dace spawn,* according to the nature of the water, from the beginning of March to the middle of April; at which times they may be seen very active among the gravel, preparing their spawn-bed, and may be closely watched without disturbing them, so intent

are they on their work. At this season the angler must have observed that their appetites are very capricious: on one day a worm offered will be taken immediately, but the next day probably it will, as well as every other bait, be refused. In a fortnight or three weeks, however, they will again be found in perfect condition.

SUBJECT.1. *Angling for Dace.*

3366. *Dace bottom fishing* is not very different from that for roach, and the one is frequently taken when trying for the other, particularly in the autumn, when both retire for a while into the deep currents of rivers. Thus it is that roach and dace fishing is at that time a common sport, as it were, but does not continue long so, for dace, during the dead winter months, retreat to still deeps, and are not so easily tempted to bite then as roach. Dace are also often taken, with barbel, in the autumn months, which shows that they then are beginning to feed low, and are very seldom tempted by the fly at the surface afterwards. The tackle for dace bottom angling should be similar to that for roach, and the baits also should be the same. To roach fishing, therefore, we refer our reader for the necessary information: but it may be observed, that where dace are purposely fished for, without reference to the taking of roach, a larger hook and larger bait may be used; and if the water be strong, for instance, as a mill-race, &c. &c., employ a gut line and a cork float. During the spring season, worms of most kinds (but the red in particular), caddies, larvæ of beetles, or grubs and bobs of all sorts, as well as small caterpillars, are all proper baits; for they all form at this time the natural food of the dace. In this way they will take small water-snails also. In the hot summer months, gentles take the lead: in autumn, greaves and pastes, particularly salmon's roe, are killing. Like roach, they are more frequently taken at the bottom than at mid-water: a tripping-bait is, therefore, the best for them in general cases, but during the summer months it is not always necessary to fish so deep. On the contrary, caddies, bobs, and worms, are often taken by them more readily in currents at nine or ten inches from the ground, or even a little below mid-water in great depths. In shallows of two or three feet deep only, particularly in such as lie in the angle of two sharp streams, or where a swift brook enters a river, or between the race-courses of mill-wheels, where there is a sort of still back water, set the bait to within four inches of the ground. In these spots dace are usually found waiting for the worms and insects that may be brought down, and which, as the eddy whirls them into the still, by its circular impetus, present themselves to the fish in the most tempting form. To imitate this, use a light line with a very fine cork or large quill float, drop it within the edge of the current, so as to gain from it the circular motion for the bait you offer, which may be worm, gentle, or caddis, &c. By this method, dace after dace may be taken as fast nearly as you drop in the line; and we have ourselves in such situations basketed two or three dozen at a time. In most other cases, however, they are not so stationary as roach, and it is necessary to shift the fishing ground often to meet with them. Dace bite sharp, and must be struck quickly; they also plunge violently at first, and should the tackle be very fine, they must be guardedly taken out, or they may endanger it.

3367. *On groundbaiting* in dace angling there is a difference of opinion, some thinking it altogether useless and even hurtful, while others consider it as greatly conducive to sport. We are of opinion, that the propriety of the use or disuse of it is dependent on circumstances. Wherever the nature of the water gives to the angling the appearances and methods employed in roach fishing, use ground baits. If, for instance, the angler be fishing in the sharp scowers of the Thames, by all means use ground bait, as that of No. 1., particularly if hook baiting with paste. When deeps are tried, if worms or gentles are used as hook baits, groundbait with No. 4., but do it rather more sparingly here than in regular roach fishing, for the reason, that dace sooner gorge themselves than roach. Captain Williamson says, "In dace fishing throw in now and then some balls made of browned oatmeal and treacle, as before described, or some ground malt. Do not use any thing for ground bait that they will make a hasty meal of; for they are very greedy, and quickly satiated, not caring to leave what they are eating. In some very sharp, quick, shallow streams, where a tripping bait has a considerable scope, and the ground is unequal, then it is prudent not only to avoid groundbaiting, but also to slip up the float to the top of the line, or otherwise to take it wholly off, and fish altogether without one.

3368. *Night lines for dace*, Mr. Daniel introduces to notice, by informing us that he has caught dace, upwards of a pound weight, upon single night lines baited with minnows for eels. We have known chub take the minnow on night lines, and we have likewise known chub of that size occasionally mistaken for dace; and were it not for the piscatory knowledge of Mr. Daniel, we should suspect that such was the case here. However, all fish are more or less piscivorous.

3369. *Fly-fishing for dace* is, with many persons, a very agreeable amusement. We have met with gentlemen who seldom pursued any other variety of angling, and we know many professed trout anglers, and ourselves among the number, who have whipped for dace for

hours with great delight; trout, however, being out of reach. We particularly recollect to have enjoyed it about three miles south of Shrewsbury, where a broad expanse of the Severn produced one of the finest dace scowers we ever met with; and where, from a clean gravel bank shelving to the water, there was such sport as rivetted us two days to the spot, having previously glutted ourselves with perch fishing in the waters of Lord Berwick. In the Thames, also, there may be found several good dace whipping stations, as Richmond, Petersham, Thames Ditton, but particularly at Laleham, which we believe is one of the best situations for it within the general beat of the London angler. In the Colne, after it has passed Denham, and begins to expand itself by the openness of the country, some good dace whipping scowers may also be found. Mr. Daniel makes mention of spots between Richmond and Kew, but they are not equal to those up the river, particularly that at Laleham. In the Trent they occur with the grayling.

3370. *On the subject of Thames fly-fishing for dace*, Mr. Daniel says, they may be taken from the middle of April until the middle of October by artificial fly-fishing with a long line, the fly generally either black, brown, or red, made very small, on a hook No. 8 or 9. The three flies may be on the line together, about a yard asunder, letting the black one be the lower fly, and that alone have a gentle at the end of it, and the other two to be the drop-flies: by this mode many dozens may be taken in the course of a morning or afternoon when they are on the fords, and the weather is favourable, particularly in rivers where the tide flows a moderate height, as for instance in the Thames, between Kew and Richmond Bridges, for every tide is a kind of fresh water to the fish, and as it clears off they will take astonishingly. Their chief biting times are, in hot weather, early or late; in cold, the middle; and in mild cloudy weather, the whole of the day; but after a hot bright sun, they will take the above flies in the clearest water, from a little before sunset until dark. Above Richmond, when the weeds begin to rot, a grasshopper with the first joint of his legs pinched off, and the hook put in at the tail, and used as an artificial fly, does great execution in a warm day upon the shallows. This fishing can only be done in a boat, which is to drive down with the current (having a heavy stone by way of anchor fastened to a rope, five or six yards long, at the head of the punt or wherry: when come to a likely spot, drop the stone, and standing in the stern, throw right down the stream, and then to the right and left: after trying about a quarter of an hour in a place, weigh anchor, and proceed in the same manner at the next probable haunt: use a common fly-line about ten yards long, and a strong single hair next the hook. It may be said that there is less certainty of catching dace in this way than with a float and ground bait; but to those who are situated near the banks of the Thames, between Windsor and Isleworth, so as to take advantage of a still, warm, gloomy day, it will afford much more amusement than the ordinary method.

3371. *Natural fly-fishing for dace* is a very killing method^d also, but not so initiatory to the young angler as the former: it will, however, prove still more convenient to the bottom fisher than the last, and occasionally makes an agreeable variation in the practice of both. The flesh-fly is a great favourite with dace, and they will take it at all times during the summer, but more particularly in the morning and evening. Whip with a hair line, the hook, No. 10 or 11, which should be inserted into the back of the fly, carrying it so as to cover the barb and fill up the bend: be careful to drop it lightly on the water. Two, three, or four drop links, each furnished with a hook and a fly, may be used at once if thought proper. The natural ant-flies are great favourites likewise with dace, and may be used in the same manner; or they may, as already directed, be sunk below the surface with effect, when these gentry happen to be too dainty to rise for them. The subject of natural and artificial fly-fishing for dace will be again touched on under fly-fishing, natural and artificial. Dace as an edible are not much in favour; nevertheless, we have lived long enough to despise nothing that is sweet and wholesome, however unpopular. At a small inn, or rather ale-house, in a remote situation, with two friends, where retirement and a stream to ourselves were the principal attractive features, a visit to the larder, which was situated in the wash-house, exhibited an assemblage of empty hooks (save one embraced by a lump of fat and rusty bacon), and gave but little promise of future joys in the eating way. As an old soldier and traveller is not often at a loss, we recommended the family oven to be heated, and a huge pie to be made of the roach and dace of our early morning's sport. It was to be thoroughly seasoned, and thoroughly baked, and garnished with boiled potatoes mashed in milk for sauce. Out we sallied, our friends not very anxious to return, the gastronomic prospect of dining with Duke Humphrey being most uninviting, for neither of our friends could fancy the pie. Hunger, however, compelled them to return at the appointed time; the pie smoked on the board, the murphies were good, cream instead of milk moistened the mass. The savoury exhalation brightened their countenances; and in the end they avowed that, if such was the fare at the Duke's entertainments, they would sojourn with him willingly, ay, even until death!

SUBJECT. 2. *The Graining (Leuciscus Lancastriensis Yarrell.)*

3372. *Silvery carp*, with almost even, bluish back, reddish eyes, and lower fins. (*Shaw.*) The graining appears a variety of the dace, which, until the time of Pennant, had escaped the observation of naturalists; a neglect occasioned probably by its local confinement to a few rivers only. That accomplished writer, however, drew it from its unmerited obscurity and gave it publicity, and it remained for the distinguished naturalist, Dr. Shaw, to elevate it to a suitable niche among the British Fauna. Mr. Pennant's first notice of it occurs, we believe, in his *Journey to Scotland*. "In the Mersey near Warrington, and in the river Alt, which runs by Sephton, Lancashire, into the Mersey near Formby, a fish called the *graining* is taken, which in some respects resembles the dace, yet it is a distinct and perhaps new species. The usual length is seven inches and a half, and it is rather more slender

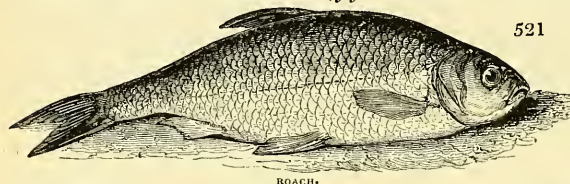
than the dace; the body is almost straight, that of the other incurvated; the colour of the scales in this is silvery with a bluish cast, those of the dace have a yellowish or greenish tinge: the eyes, the ventral and the anal fins in the graining are of a pale colour."

3373. *The graining is fished for like the dace*, both below and above the water. Worms and gentles are the principal bottom baits, the former being most killing in spring and summer (the fishers of the country recommend the brandling and gilt-tail chiefly), and the latter in the autumn; they will also take all the local insects around them like the dace.

3374. *Graining are likewise taken by the fly*, to which they rise freely in the same manner as the dace; and as their weight extends to half a pound, they are by no means despicable in an angling point of view. Bainbridge recommends purposely that hackle-flies for this fish be dressed on small hooks of the following description:—one from the feather of the starling's wing, and another the bright hackle of a golden plover, both of which he speaks of as very killing: they will likewise take the red spinner extremely well (No. 43.), and both the large and the small red ants (No. 52. and 55.) The sandy feather of a landrail for wings, and a bright gentle for a body is also said to be a favourite bait for this fish. The graining is stated to be very superior in taste to the dace, and even to be excellent: we never tasted them, and have seen but few.

SECT. VIII. *The Roach (Cyprinus rutilus Linn.)*

3375. *Yellowish silvery carp with brownish back*, lateral line curving downwards, and red lower fins. This is a handsome fish (*fig. 521.*) either in the water, or fresh out of it. It



inhabits many of our deep still rivers, affecting, like the others of this genus, quiet waters. It is gregarious, keeping in large shoals: it has a small head, a leathery mouth, which is round and also small, with the teeth in

the throat; large eyes, the circle of which resembles gold colour, and the iris red. The roach is deep but thin, and the back elevated; the scales are large, and easily fall off; the fins are in general red, particularly whilst in perfection, as they may also be known to be by the smoothness of the scales, which when out of season feel like the rough side of an oyster-shell; the side line bends much on the middle towards the belly, and the tail is a little forked. It is popularly considered so silly a fish that it is named the *water sheep*, in contradistinction to the carp, which for its subtlety is termed the *water fox*. The proverb of *sound as a roach*, appears to be not peculiar to this country: the French have the same idea, who compare people of strong health to their *gardon* (our roach); yet this fish is not more distinguished for its vivacity than many others.

3376. *The distribution of the roach* is almost universal, and they breed profusely as well in ponds, meres, and marshes, as in rivers and lakes. In the extensive marsh lands of Philip Bennet, Esq., near Tollesbury in Essex, whose residence and manorial rights we rented some years ago, there are several stagnant pools of great extent, all of which, in common with such vicinities, are very slightly brackish. Some seventy or eighty years since these were overflowed by an eruption of the sea, and the quantity of roach destroyed was such, that the dead were taken away, it is said, in two waggons, as well for manure as to prevent the injurious effects of their decay. Dr. Bloch informs us, that on draining the marshes about the Oder, so great a quantity was taken, that the fish were used about all the neighbouring villages for the purpose of fattening the swine.

3377. *The roach is generally described as an incautious silly fish*; but this opinion was probably at first hastily founded on its readiness to take any bait when confined in very close situations, as small ponds, &c. Such a character once attributed to it has, through the unfortunate habit of writers in copying the statements of others without examination, been rendered prominent; and thus in many other cases endless error is propagated. Our own experience makes us decidedly deny this to be the true character of the roach, and many instances within our own knowledge have confirmed that decision in our minds. One, which is immediately connected with the above waters, will afford ample proof of it. The largest of these marsh pools of the Tollesbury Marshes was very long but narrow, so that a very large net would reach completely across it. Its extent may be judged of by its having a boat-house and boat attached to it. From the former facts, with regard to its prolific nature, as well as from observations made on the seeming quantity of fish at present within it, which appeared to equal those destroyed by the flood, we conceived a design to draw it; and the Rev. George Driffield making this intention known, begat an offer from another divine of great sporting celebrity in Essex (Mr. Barker Daniel) to lend both his valuable assistance, and a net of extraordinary dimensions and very great value, being formed entirely of silk. The expectation of a "miraculous draught of fishes," had drawn together a vast body of spectators and assistants; and the worthy divine himself attended to direct the operations of his net. He was a very otter in the water, and for some hours he was either swimming or diving within it, or employed on the banks around it; and seldom had there been more interest or activity displayed than was now exhibited by all parties to prevent the escape of the roach, either above, below, or at the sides of the pool: and so varied were the means made use of, and so completely did this extensive and fine net cover every inch of the water, that it was thought impossible that a single fish hardly should escape. After more than three hours had been thus taken up, the end of the water was reached, and preparations were made to haul out. Expectation was now at its height, it was, *parturient montes*; the net was landed, and it was, *exit ridiculus mus*; for some eight or ten roach, we forget the exact number, were all that appeared; and the next day the water provokingly exhibited its

multitudes as before. As this marsh was very strictly preserved, and in fact we believe a llne did not get wetted there once a year, the fish could not have become artful by persecution. Theirs must have been instinctive cunning employed in self-preservation: and it was the general opinion of those competent to judge, that finding themselves thus closely beset, one part had forced themselves within the interstices in the banks made by the willows and alder stumps which were very numerous, and that the others had, like carp, simultaneously plunged themselves into the mud below, which was some feet deep.

SUBSECT. 1. *Angling for Roach.*

3378. *Roach fishing* affords a striking proof, that with very few exceptions our angling treatises are all much too local to be generally useful. They are almost all written for a particular locality only, and however well they may describe the individual fish, with their habits and methods of capture in any one immediate district, yet altered as these become frequently by the external agencies around, which equally operate on the fisher and the fished, it would become absolutely necessary to collect from very extended sources to obtain any thing like a *general practical knowledge* of the art, or of the fish connected with it. It is thus that Bainbridge expends half a page only on both the natural history of the roach and the mode of angling for it, and a third even of another is devoted to assure us, that in themselves they are good for little, *and the sport derived from them good for nothing*. Salter, on the contrary, has presented us with seven closely written pages, expressly devoted to pure roach fishing; and we should think the numerous minor remarks and notes on the same subject, scattered through his work, would make three or four more. Moreover, we believe that no London angler, and not many country ones either, would think there was a word too much.

Mr. Daniel likewise favours us with a dozen pages on the roach, and the different methods of taking it, which attention to the subject on the part of reputed authors is sufficient to show, that although in Mr. Bainbridge's neighbourhood this fishing is lightly esteemed, in other localities it is considered a *first-rule sport*. We should, however, in justice to Bainbridge's excellent work, not forget that it is expressly written to exemplify the practice of fly-fishing, and roach are not attractive subjects of that art, though we think dace have some right to be so considered. Mr. Bainbridge only treats of the roach, as occasionally taking the fly.

3379. *The best season for roach fishing* is from autumn until the following spring. In May they usually spawn; occasionally it is both earlier and later: after they have spawned they continue out of season for several weeks, hardly recovering until the latter end of July, which is not to be wondered at when we consider the debilitating effect of such a quantity of ova, the grains of which in a single fish have been reckoned, and were found to amount to fifty-four thousand, which must consequently require a very copious supply of milt from the male to fecundate.

3380. *Roach angling* offers much interest to the piscatory amateurs, who are shut out from the higher pursuits of fly-fishing. The roach is an elegant fish when taken, and we have shown that it requires some skill to deceive it, while its game qualities are such that it contests the matter with the angler to the last, so as to yield no small triumph when landed. We have seen a roach of a pound in a strong current in the Thames raise the blood in the face of an angler of fair fame. They also, when in condition, bite freely; but we consider that the principal hold they have, or ought to have, on the angler, is their great plenty, the numerous methods that may be employed to take them, to which may be added the time of year that sport may be obtained with them, which is, when few other fish yield any. From the bottom of the water, every inch of the way up to the surface, they may be fished for in various manners; and when they are sunning themselves at the top, they will take a fly with the best. Nay, they are occasionally caught by a hook baited with a minnow, and if report be correct, have even been trolled for. No fish whatever exerts the capabilities of the angler so extensively as this; even the grayling (whose versatility in yielding sport is great also) must nevertheless give place to the roach, a precedence which we think will always rank it as a distinguished member in the piscatory list; and this opinion, from one devotedly fond of fly-fishing, may be considered as something in favour of its tribe and qualities.

3381. *Roach* sometimes attain considerable size. Pennant, on the authority of a respectable fishmonger, mentions one of five pounds. Walton notices another that he saw of two pounds. He informs us that in his time the largest roach in the kingdom were in the Thames; and that they had frequently been taken near Kingston, of two pounds and a half in weight. We have ourselves taken one of nearly two pounds in the Avon, at Downton, in Wilts.

3382. *The London professed roach fishers* use a very light but long rod, with a tolerably stiff top. Many prefer one of cane or bamboo for its lightness, which is of some moment, where the tool is eighteen or nineteen feet long, and some will not use one shorter. A considerable length of rod is absolutely necessary to command a sufficient swim without exposing the angler to the sight of the fish. It must be also remembered, that although this, in common with every rod, should be elastic, it must by no means be too limber or flexible, or it will not strike the fish smartly. The action of the wrist would be lost, or communicated too slowly, when it had to be diffused through the elasticities of too pliant a rod. With regard to the line, the most expert artists, and such as pride themselves on their perfection in this particular branch of angling, will seldom use any but one of single

hair : others use the finest gut procurable, especially for the lower portion of the line. Some, again, employ a line made of two hairs twisted for the upper part, and allow two or three feet of the lower portion to be formed of one hair only, by which, should a fish break away, the hook only is lost, and not the float.

3383. *This practice we recommend* ; for although we never had so much dandyism in our own roach fishing as to make use of floats worth five or ten shillings each, yet a truly good swan's quill, or reed float, is not easily replaced (p. 981.). This method of making the line is, we believe, pretty generally adopted among the professed roach fishers of both the Lea and the Thames, particularly the Lea, and by a few in the neighbourhoods of other large rivers of the kingdom ; but by far the greater number fine gut is employed, from the uncertainty of retaining with hair the fish which may be hooked. It is however certain, that he who fishes finest for roach and dace will be most successful. In our instructions for the making of bottom lines this subject meets further notice (p. 970.). Neither is the danger of breakage in the use of hair equal to what many suppose it to be : a single hair in a fine hand will kill a heavy fish, of which one proof among many may be noted :—“ In October, a chub, weighing six pounds three ounces, was taken in a subscription water of the river Lea with a light hair line, and a hook (size No. 10.) baited with paste. The singularity of the fish, in its wanting the two belly fins, and its being killed with such fine tackle, induced the party, and some other members of the Amicable Society of Anglers, belonging to the Horse and Groom at Lea Bridge, to have the said chub preserved and fixed up there for the inspection of the curious naturalist and angler.” We could furnish many other instances of heavy fish being safely landed with a single hair line only. We need hardly recommend that each individual hair on such line be first tried before it be whipped on with the others.

3384. *The hook in roach angling* should be as fine as the line ; when of single hair, it may be No. 9 or 10. Mr. Salter recommends No. 11., and in the depth of winter, when the bitings amount to little more than a nibble, this will not be too small. If a gut line be employed, the hook may be No. 8 or 9. ; and we would advise that, to take off the glare of the gut, and make it as little conspicuous as possible, it be stained very lightly of a pale water blue. It was likewise our own practice to shorten the hooks we used for roach fishing, by removing nearly one-third of the shank ; and if anglers were once to adopt these curtailed hooks in their fine fishings, they would never afterwards make use of any other : they are particularly applicable in the present case, from the diminutive size of the mouth of the roach. The shooting of the line should engage as much attention as the rest, that the lead may not scare these timid gentry. The method of shooting has been before dilated on. It is only necessary further to remark, that unless there be much wind, or a strong ripple from current, &c. there should be somewhat less than a quarter of an inch of the float to appear above the water. The length of line from the float to the rod may vary according to circumstances, as from eighteen inches to two feet ; but the shorter it is, the more command will the angler have over the extreme fine winter bites even of the largest fish. As already directed in dace fishing, let the float, the line, and the point of the rod be always perpendicular to each other ; and carry the line lightly but perfectly extended, that there may be no time lost in drawing it tight before the stroke, which lost time is a momentary signal to the fish to quit ; for in this case his notice to *quit* is given ere the angler's notice to *detain* him arrives. Practise striking from the wrist when you are fishing for roach, or you can never become a perfect roach fisher : the arm and elbow should be nearly motionless at the time of the stroke. During our own novitiate, we were roach fishing within ken of our master. The first bite which occurred, we struck lustily with our arm. “ That's right,” said our friend, “ whales are scarce here ; but I am sure you have got one.” We certainly had taken something, but it was the rebuke and the experience ; for we got deservedly laughed at, and had lost our hook and part of the line. We had received a practical lesson, and we were afterwards prepared to give one : but as to ourselves, we never needed another.

3385. *The baits used in roach fishing* among the professed London roach fishers, are principally gentles and pastes. In rivers, lakes, and ponds, remote from the metropolis, although gentles are used, yet worms are chiefly depended on. It is only in rivers and moving waters, however, that the roach is estimated as an object of much sport ; and consequently it is for them only that the angling for it is studied and practised with a degree of refinement and science unknown to the other. Salter observes on this, that “ the taking of thirty pounds' weight or more of roach, from six or eight ounces to a pound or upwards each fish, out of a stream from six to seven feet deep, with a very light rod, single hair line, and No. 10 or 11. hook, in a day's angling (which is frequently done by the London anglers), affords a proof both of dexterity in the art and attachment to the sport. Indeed,” he adds, “ I am acquainted with many anglers who seldom wet a line but for roach, preferring it to every other kind of fishing.”

3386. *As worm baits*, the marsh, the branding, the blood, and the red, are all taken with eagerness by roach when they are on the feed ; but the worms should be well scoured to insure success, as already fully detailed (p. 1002.). Worms may be considered as the early spring bait. In its more advanced periods, worms alternate with caddies, with larvæ and pupæ, or bobs and grubs of all sorts. Salmon's roe is a favourite bait at this season with some anglers, who find it taken freely by roach, particularly in the still depths of rivers. Gentles are employed for the advanced summer and autumn months, while pastes of various kinds, particularly the stale bread paste for still waters, and the new bread paste for streams and currents. For the modes of baiting the hook, &c. with these several articles, we refer to the baits themselves (p. 1034.), where full instructions will be found.

3387. *When angling in a tide river for roach*, it is essentially necessary to try the bait at various depths, for roach then never remain stationary, particularly from the time the water is flowing until high water. To this period they commonly bite well, but as commonly they cease as soon as the tide turns, except there be a fresh in the river, when they will oftentimes take in the ebb also. In navigable rivers, as the Thames, which have the waters impounded to assist the navigation, choose those days on which there is what is called a flash (*i. e.* a flush of water) let out of the pounds and locks. In all these cases the fish lie in wait for what the disturbed states of the stream bring down. Should the current flow very strong, remember to try for them towards the sides of the stream.

3388. *The season for roach fishing* in the Thames above the metropolis begins about the latter end of August, and continues longer than any, for professed anglers choose to brave the winter. In the summer the roach live among the weeds, which they do not quit for the deeps until the weeds become putrid, which depends on the dryness or wetness of the weather, much rain hastening their decay. This change of situation the fishermen all along

the river carefully notice, and except a few of them, who are attendants on anglers, they one and all set to work to sweep them away with their drag nets. It requires, therefore, that the angler be also on the watch at this critical period, for, after boat loads of roach have been carried to Billingsgate, his sport will be ruined. Happily this seldom occurs now.

SECT. IX. *The Rud* (*Cyprinus erythrophthalmus* Linn.).

3389. *Slightly gilded olivaceous carp*, with brownish back, reddish eyes and fins. (*Shaw's Linn. Syst.*) *Cyprinus erythrophthalmus*, *C. pinna ani radiis quindecim, pinnis rubris.* (*Ibid.* i. 530.)

3390. *Dr. Fleming's characters and arrangement of this disputed fish* are as follow:—*B. orfus*, rud; mouth without beard, body deep. Synonyms: *Rutilus latior*, rud or tinsale (*Will. Ich.* 252.); *C. orfus* (*Linn. Syst.* i. 530.); rud (*Penn. Brit. Zool.* iii. 363.); *C. orfus* (*Bloch. Ich.* tab. xvi.). This fish has occasioned so much disputation among naturalists, that we shall not enter into a long description of it; nor are anglers wholly agreed upon it, except that it is not a very important object of sport. In length the rud is from twelve to sixteen inches; body deep and thick; head small; irides yellow; scales large; back olive; sides and belly of a gold colour; ventral, anal, and caudal fins red: spawns in April. This fish, according to Willoughby, is found in the lakes and rivers of Yorkshire, Lincolnshire, and Oxfordshire. Pennant and Bloch inconsiderately refer this species, so well described by Willoughby, to the *erythrophthalmus* of Linnæus, which is also the *erythrophthalmus* of our venerable ichthyologist. The serrated spinous rays of the dorsal fin induced Fleming to place it along with the barbel, from which, however, it seems to differ generically in shape, and the absence of a beard. It may be termed, after Willoughby, *Rubellio fluvitilis*. Dr. Foster supposes the rud to be between the carp and crusian. (*Brit. Zool.* iii. p. 310.)

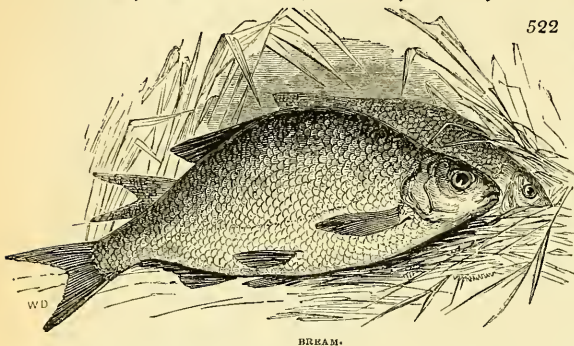
3391. *The rud*, although scarce, has been found in the Thames, the Lea, and in Dagenham Breach; but it does not abound in the two former: it is, however, said to have been common in the latter. It is found in the ponds in Wanstead Park. Mr. Daniel makes mention of one accidentally taken with a minnow at Kimpton-Hoo, near Welwyn, Herts; and Captain Williamson, likewise, was informed of one which was caught in the Nen, near Wansford. Mr. Pennant considered the "shallow" of the Cam (which, he says, grows to the length of thirteen inches, and spawns in April,) and the rud of other rivers as the same fish. It may, however, be remarked against this, that the "shallow," or "showler," is a provincial name in the north-eastern counties for the dace, which is hardly likely to be mistaken for the rud.

SUBJECT. 1. *To angle for Rud or Redeye.*

3392. *To angle for rud* requires only to use tackle one degree stronger than for roach. The baits, and the methods of applying them, are the same as those made use of for roach. This similarity was noticed long ago by Moses Brown. On this angling that old but intelligent compiler, Dr. Brookes, observes, "They bite freely, struggle hard for their lives, and yield the angler good diversion. They feed near the top of the water, and the principal baits for them are red worms and flies." Captain Williamson says, "The rud being a great struggler, must be angled for with strong tackle, such as hook No. 5., on good single gut, without shot, and allowing your bait, for which a fine bloodworm or a cad bait is preferable, to play about with a very gentle motion, about a foot deep, among weeds that are not very thick, now and then lowering your bait to mid-water or more. Angle in this manner in the deep bends of gently-meandering streams; early and late, when the weather is close and sultry; but when there is a moderate, ruffling breeze, you may catch them at all hours, especially in the spring and fall; and sometimes in the winter, when the weather has been mild for some time, and there falls a little sleety rain. The rud will sometimes rise with great avidity at a neat brown fly, or at a red spinner; but they are extremely cunning, and are more easily taken by means of a natural fly, especially the grey stone-fly and the yellow cowdung-fly, both of which they seem to be partial to. You may occasionally use other baits, such as gentles, baked wasps, and the salmon's roe; but, in my opinion, the worm and high-coloured cad bait are by far the best." It is singular that Captain Williamson should add his belief, that the rud is never found in ponds: he even attributes the death of the one recorded to have been taken in the Nen to the circumstance of its being put into a pond. It was more probably occasioned by its being in full roe at the time; but the want of information on the subject of the *habitat* of the rud, is a little extraordinary in so intelligent an author, for we believe it is notorious that they live perfectly well in stagnant waters. Mr. Salter even says that they thrive best in ponds, but that there they seldom exceed a pound in weight. They are, as far as our own opinion goes, always more brilliant in colour, firmer in flavour, and altogether they thrive better in such still waters as have sand or gravel for a bottom; but isolated instances, without corroboration, form bad precedents, and the recording them misleads. Animals may, by introductory processes, be brought to exist in localities very different from those to which they were native, and on food to which they were before unused; such are the powers with which Nature has invested them for their preservation.

SECT. X. *The Bream (Cyprinus brama Broch.).*

3393. *Broad olivaceous carp (Abramis brama Cuvier, fig. 522.)*, has a flesh coloured abdomen, smallish dorsal fin, and twenty-seven rays in anal fin. It is a large rhomboidal



shaped fish, with a high arched back, and sides disproportionately compressed. The head is small, and the snout rather pointed, ending in a remarkably small mouth, void of teeth: the eyes are large and full. This fish is strongly characterised by its lateral line, which is wavy and tortuous, being incurved from the gills downwards into a kind of bow, the lower arm of which extends much nearer the belly than in any other member of the cyprinus genus. From this it rises somewhat, but is still continued

low compared with its usual course, and is again once more bent in its passage, as expressed in the figure. The scales are large, elevated, and sometimes covered with minute tubercles; the dorsal fin is rather small, and its second ray is longer than the others. The anal fin will be seen in the figure to extend from the vent almost to the tail, which is deeply crescented or forked. In some specimens, at the base of the ventral fins on each side, a mammillary process is seen; in others, very faint traces of it only can be observed. In colour the bream is of a bluish black above, with the side and belly white; but when it has become large, and is in very high condition, it gains a golden tinge. This well-known kind in the Trent is called the *carp bream*, in contradistinction to another variety common also there, known as the *white bream*, which latter never exceeds a pound in weight, neither does it become tinged with yellow. (*Linn. Trans. xiv. p. 587.*)

3394. *The internal conformation of the bream* presents a very long liver, which lies between the stomach and intestine, having its gall-bladder almost imbedded within its parenchymatous substance. The spleen is angular; one flexure only exists in the intestinal canal, and the air-bladder or swim presents two lobes. Their existence seems to depend on circumstances not familiar to us. Some waters, apparently well adapted to their growth, are entirely destitute of them; while in others, not to common observation very different, they swarm. They are not often met with in the Thames or Lea, but in the Mole they are numerous. Brookes says he has seen at least fifty brace together at Esher Bridge. In the Wey also they are plentiful, as well as in the Byfleet, in the wet docks of Blackwall, and in many other fleets, meres, and slow deep rivers throughout England; as well, likewise, in some of the lochs of Scotland. Mr. Pennant makes mention of them particularly as occurring in Lochmaben. Bream attain in favourable waters to a considerable weight: they have been seen of ten pounds even. Gesner informs us of one he saw which was a yard long, and two feet broad. Their usual size, however, is from one to two, and occasionally three pounds' weight. In Dagenham Breach they are extremely numerous; and whenever they thrive, they are observed to prove so prolific, as to destroy most of the other residents by leaving them nothing to feed on. For this reason they are cultivated to advantage in large pieces of water where pike are kept, for which they serve as a never failing supply of food. Bream thrive well in waters that have oozy bottoms and still deeps; and they are not hurt by such as are slightly brackish. They are gregarious, swimming in shoals: in hot weather they are found very near the surface; at other times they resort to the deepest and broadest parts of a river, but are seldom to be met with in the confined narrow places of any water. Bream spawn in June, retiring for that purpose to the weeds, and continuing out of season some weeks, during which they will seldom take a bait well.

SUBSECT. 1. *Angling for Bream.*

3395. *Angling for bream* is a lively amusement for the bottom fisher, for if he keep well out of sight and be dexterous, he may take a very large number of them, and this in some situations within a very short time: except during their spawning season, they will seldom refuse a bait in the mornings and evenings of bright warm days. When it is windy, warm, and gloomy, they will take a bait freely throughout the day; and a drizzling warm rain in still waters, as in Dagenham Breach, is favourable to their biting. Bream in the spring months take a worm in preference to any other bait: they are also at this time in full season. In angling for them, we always baited with a red worm by choice. The tackle made use of in bream angling should be exactly similar to that directed for the rud, that is,

it should be strong but fine, with a running line attached: a gut line is the most proper, with a quill float for still waters, but a cork one for currents, in which situation they are, however, less likely to be met with: the hook may be No. 7., 8., or 9., according to the size of the fish in the water. Ground bait attracts them much; and it adds much to the sport to throw some in the evening previous: its nature should of course accord with the hook bait.

3396. *For bream in broad waters with reedy shores*, it is not altogether uncommon to employ two or three rods at a time, which are each of them supported among the weeds by means of a fork stuck in the ground, or by the reeds themselves, the angler nestling himself within them likewise in such a manner as to command a view of the three rods, but to remain unseen by the fish; of course a bite at any one of the hooks calls him out. We saw one of these anglers thus employed in fish-murder in Dagenham Breach, and his zeal had nearly made him fish-food also, for he slid in; and those who know the reedy shores of the Breach must be aware, that it is as bad a situation for a hasty exit, offering as few resources for retrieving a fall as one might (if wickedly inclined) wish another to meet with. We were happy to assist the wight out, but were not very sorry to see him get a good ducking. He afterwards observed, that "he thought he should in future content himself with fishing with one rod at a time." It is a vulgarism, but very applicable here, that "fair play is a jewel." With one rod, a true angler will have both sport and fish; with two he may take many fish, but without what we should call sport; and with three he deserves to lose his fish, sport, and all, except he be fishing for bream, and then we may wish him good luck. This many-rod fishing for bream, and equally for carp also, derives its origin from Walton, who is most circumstantial in his detail of the apparatus and process necessary for it, and from him it has descended in various "shapes, until we find it even more enlarged on by Mr. Daniel, who recommends that to each of three rods should be a silk and hair line, armed with a lead of a form resembling an *upright brass weight*, the upper end of which should be attached to the rod line, and the lower to the hook line, at ten inches from a No. 4. hook. Groundbait over night, and on the following morning, by three or four o'clock, proceed with great caution to the place so as not to be seen by the fish, some of which are frequently at the top of the water, while the rest are feeding beneath. Having baited the hook that the worm can move on it at bottom, cast it, and by drawing it gently to you, let the lead rest about the middle of the ground bait: a second rod should be a yard or two above, and a third, one or two below it: retire from the water so far as just to perceive the top of the floats: when there is a bite, the top of the float will sink suddenly, remain quiet until the line goes clear away, then creep to the water side and give as much line as possible: if it be a good carp or bream, it will go to the farther side of the river, strike gently, and hold the rod at a proper bend that it may tire him, for if both pull together, either line, hook, or hold will break, and the fish will be lost. The bream is strong, and runs hard when first struck, but after two or three turns he will fall on his side, which enables you easily to land him: the carp is far stronger and more nettlesome than the bream. It is advisable to use a reel upon the rods for carp, barbel, or bream; the length of line kills the fish with ease, and increases the angler's amusement." With all that deference which we think due to the venerable Walton, we should have been better pleased with some instructions from the reverend compiler's own note-book than these by-gone practices of the old school. The following is better:—"Another mode of catching bream is, after plumbing the depth, put one or more shot a foot below the float to balance it, which is a way to take the shyest fish; the bait, a large red worm, which must be laid in and let sink very gradually to the ground bait: when the fish bites, strike gently that very instant." The next is on a par with the first:—"Take a running line with a bullet and hole through it, and a small shot to hinder the bullet falling on the hook: let this run on the bottom with the current into holes, and, equally as for the bream, it will be found to answer for all other fish that bite at the bottom."

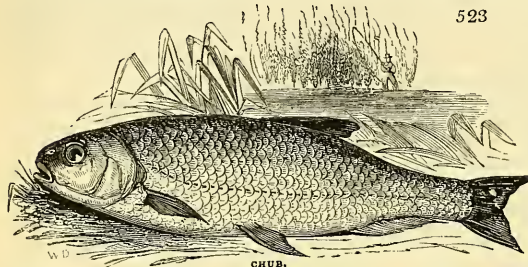
3397. *Bream will likewise take caddis-bobs and grubs*, and all the other usual larvæ. In the large rivers of the midland counties, as well as in the great pieces of water called broads, meres, fleets, &c. the salmon-roë is also an excellent summer bait, and will be seldom refused by them: they will likewise take natural flies, as the house-fly, flesh-fly, stone-fly, during the day, and in the evening they seldom refuse the various moths. In dipping with these baits, the utmost possible caution must be observed by the angler to keep himself concealed, for the moment bream discover any one near they sink to the bottom immediately; though, as they very soon appear again, the mischief may usually be repaired. In these cases it has been our practice, first to suspend the rod, so that the top might be lowered at pleasure: we have then, when it has been possible, placed ourselves so as to be sheltered by rushes, reeds, or foliage; if these were not at hand, we have screened ourselves by sitting or reclining, and when settled in our position we have dropped our rod point and commenced our angling out of the view of the fish. The bream is not always a quick biter, and even when it is, its small mouth sometimes produces a kind of suction, particularly if the bait be a full sized one: it is therefore necessary to strike with some caution, and

the proper degree of it will be best taught by a few successful and a few unsuccessful bites. We know an angler who frequented the water lately alluded to, who in the midst of bream, carp, and perch, had so quick an eye and so sensitive a hand, that he would call out the bite of the fish at the moment of striking, as a carp! a perch! a bream! and three times out of four he proved right. On one particular occasion, when he was showing off in this way, we met with a ludicrous circumstance: the halloes of "carp, bream, or perch" were suddenly interrupted by a vociferation of *the devil!* and certainly his line was hauled under the water by something that pulled at a d—l of a rate: the tackle was good, and at length we landed a large eel, which had evidently taken the bait of a night line, and its struggles having loosened the bank peg, it was now swimming about in a miserable state with the bait hook within it, in which way it had come athwart our friend's tackle, and produced this d—l of a bite.

SECT. XI. The Chub (*Cyprinus cephalus* Linn.).

3398. *Silvery bluish carp*, with olivaceous back, thick head, and rounded snout. As regards the character of the chub, it is somewhat singular that both Drs. Shaw and Don-

van should have fallen into the error of considering it as the *Cyprinus jesus* of Linnaeus, into which they appear to have been led by Bloch, who, when describing his *Le Villain* or *C. jesus*, adds, *Pennant se trompe, quand il croit que le céphale de Linné est son chub; car la figure de la nageoire, de la queue, et le nombre des rayons dans les nageoires de l'anus, prouvent que ce sont deux poissons différens.*" (*Ich. tab. vi.*) The *C. jesus* Lin-



naeus describes as having fourteen rays in the anal fin, whereas the chub has eleven only. The chub, or cheven (*fig. 523.*), is common in the English rivers, and in other waters which have a stream passing immediately through them. In the Thames and Lea they are numerous, and furnish the London angler with great amusement. It is a powerful fish, and will stem rapids, and swim with great force against currents. It is however timid in the extreme, retreating to the bottom of the water at a shadow even, but re-appearing soon after. It is, like the other members of this genus, without teeth in the mouth, and has, like them, a compensating bony appendage to the palate: the lateral line runs parallel to the abdominal flexure. Internally it presents a long stomach: the intestinal canal has one considerable flexure only; the liver is lobular; and the air-bladder or swim is two-lobed likewise. Chub feed on aquatic insects, and also on all the *Coleoptera* and their larvæ, as well as on insect larvæ generally. Winged insects of every description they pursue with greediness, and sometimes also the lesser fish are objects of their attack. This fish takes its name from the size of its head, not only in our own language but in others. We call it chub, according to Skinner, from the old English *cop*, a head; the French, *testard*; and the Italians, *capitone*. In different parts of England it is called chevin, nob, or botling. It much resembles the carp, but is of a longer form: the body is oblong, rather round, and of a pretty equal thickness in the greater part of the slope; the scales are large; the irides silvery; the cheeks of the same colour; the head and back of a deep dusky green; the sides silvery, but in the summer yellow; the belly white; the pectoral fins of a pale yellow; the ventral and anal fins red; the tail forked, of a brownish hue, but tinged with blue at the end; and the chub is altogether a handsome fish. Chub arrive at considerable size. We ourselves took one in the Lea with a black silver twist palmer, weighing upwards of five pounds, which is however rather an unusual size for one in this much fished river. In the Thames one of three pounds even is a fine fish; but in favourable situations, and where they are allowed to reach their full growth, such fish as the above are common. Captain Williamson states, that on one evening he saw four caught under a weir, of which the smallest weighed eight pounds, the largest more than nine. Bloch informs us, that eight pounds is a common size for them in Germany: Salvianus affirms likewise that they arrive to eight and nine pounds' weight in many waters of the Continent. The chub spawns in April, and regains its condition in a few weeks: during its emaciation, however, it will take a bait moderately well.

3399. *The situations in which chub are most likely to be found* are deep rivers having a clayey or sandy bottom, and one that is also bounded by clay or marl banks. Sometimes they are to be met with in rocky rivers, but such are always found to have some deeps with soft bottoms of their own, or are found to communicate with waters which have. In fact, chub thrive only in such rivers as present a diversity of rocky and strong gravelly currents, widening occasionally into large and deep pools where sand and ooze accumulate. It is

here they flourish, and such situations they choose as their winter hiding places. In chub rivers such pools are never without them at any season, which has given rise to the angler's adage, "Once a chub hole, always a chub hole." In summer, river chub shelter themselves from the heat, more particularly in such deeps and pools as are overhung by foliage or trees. In stagnant and open waters they hide themselves under aquatic plants. At the bottoms of weirs, flood-gates, locks, and mill-aprons, they are also commonly to be found.

SUBJECT. 1. *Angling for Chub.*

3400. *To angle for chub.* This practice differs but little from that of dace fishing, with the exception of the strength of the tackle. The same, or perhaps a little more, caution is requisite : the same care that the line, float, and hook, be as fine as is consistent with safety should be taken : and the same baits, with little difference, answer for both anglings. Chub are valuable appendages to the bottom fisher's sporting list ; for they, like roach, may be angled for all the year round. They will take a variety of baits also, and in a variety of ways. At the bottom they are tempted with worms and with insects of all sorts : these form their spring repasts. In summer they will rise to almost every kind of fly and beetle which is thrown to them on the surface. In autumn they take gentles and pastes ; and in winter they may be ensnared by means of bullocks' brains, pith, greaves, &c. For the particulars of these several articles as lures, we would refer the reader to the chapter on baits. Neither are they always neglectful of the live fish bait : we have ourselves taken several with a minnow, and likewise by night lines baited with the lamprey, which latter method will often secure some of the largest amongst them, for it is only the larger chub that are thus predatory. Chub should be struck the moment the angler perceives a bite ; and as it is presumed that no one would angle for them without running tackle, it is necessary to allow a full liberty of line immediately afterwards. The first struggles of a chub are generally desperate, and require some caution if the fish be large ; but fear not, it is soon discouraged, and a few minutes' management, as already directed, will land the prize safe, though hooked with the finest tackle. But as the chub, when struck, very frequently makes straight for some weed-bed, or shoots under roots of trees, old piles, or in fact wherever it can shelter itself, it distresses the angler by entangling the line, and requires to be well looked to.

3401. *Chub are sometimes angled for by sinking and drawing*, which must be done with a strong line, and a stout rod also ; and the more particularly, as the practice of sinking and drawing is peculiarly applicable to such dangerous situations as we have just described. No float is used, but as much lead is put on the line as will just sink it with a No. 6, 7, or 8. hook, according to the expected size of the fish thereabouts. Bait the hook with whatever animal matter is thought proper, as worms, caddies, gentles, or greaves ; let it now *sink* to the bottom, and then gently *draw* it up again, not perpendicularly, but rather side-long, now rather quick, now slow, varying its action with judgment, and avoiding to come foul of stumps, piles, &c. &c. At the same time, the angler must not omit to guide the descent of the bait into all their holes and fastnesses, although all these impediments should be in the way, for here the fish often herd together : to steer clear of obstructions, sink the bait perpendicularly down, and draw it up in the direction it was let down in, by which precaution it may ensnare the fish, but will not entangle the hook.

3402. *Roving or trolling* with a live minnow we have occasionally practised also for the capture of chub with success, particularly in the Lea and Wye. In the Thames also this is practised ; and we know that this bait has taken them often when the fly has been refused.

3403. *Fly-fishing* for chub will again occupy our attention separately, when we describe that species of angling : we shall in this place only touch on it generally. In May, June, July, and sometimes in August, these fish will readily take the artificial fly during the whole of a close warm day : the humble bee, palmer, both the red and the black varieties, are killing baits ; but we prefer during the day to use the red, dressed with gold twist ; and towards the evening the black, with silver twist, we usually found to be best suited to the taste of our prey. The large black caterpillar-fly, No. 34. ; the golden palmer, No. 12. ; the golden peacock palmer, No. 14. ; and the large blow-fly, No. 48., are all excellent chub fly-baits in the summer months. About the close of the evening, the moths, Nos. 39, 40, and 41., will be taken, not only until late, but in bright weather all night long, the largest chub coming to be served first.

3404. *Towards the decline of summer*, chub leave off feeding on flies and other insects, which they take on the surface of the water, and retire to deep holes and deep pools, where the bottom angler will follow them with his gentles, and bee or wasp grubs. They will also take salmon's roe. As the season advances, it is prudent to try cheese, and some of the other pastes described. In winter, the crack London chub anglers principally depend on ox pith and bullock's brains, particularly the latter, the method of using which is detailed in the section on baits. As regards pastes we have to remark, that they may be used both before and after the spawning season in quick streams. One in our paste list is particularly recommended, from its resisting the current, and allowing itself to be shown as a full-sized bait

for a full sized mouth. Later in the year we are more favourable to some others. We therefore refer the chub angler to our account of pastes, as being worthy of his attention.

3405. *The chub*, from the variety of sport it yields, and from the long continuance of that sport, uninterruptedly, through almost all the months of the year, is entitled to much consideration from the angler. If it be not prized for its edible qualities, it is a handsome fish, and very symmetrical while young. As chub advance in years, they become bulky in proportion to their length, the head grows coarse, and shows strong markings, and altogether they then resemble the carp in figure, and even the colour participates of that of a pale carp. In this respect they, however, differ in different waters: we have taken very large chub both in the Severn and the Wye, but in neither of those rivers did the colour of the chub approach so much to that of the carp as in the Lea.

3406. *Chub and dace* are often confounded together. We have frequently witnessed disputes between anglers on the identity of these fish, from the circumstance that, in general outline and colour, there is a considerable resemblance between the young chub and the matured dace. Attentive observation, however, readily discovers the difference between them: the lunated or forked tail of the dace is easily distinguished from the more even one of the chub; and the purple tippings of both the tail and dorsal fin of the chub are altogether wanting in those of the dace, whose head likewise is always more pointed and elegant than that of the chub.

3407. *The culinary treatment of the chub* must be very good to make the fish a favourite with the epicure. We can however, both from experience and from various authorities, even vouch that it may be made eatable. We have the word of Dame Juliana Barnes, or some other writer of her day, that the chub is a stately fyshe, and his head a dainty morsel. These early worthies seem to have had some practical knowledge of the good things of this life, and have left a few memoranda to guide the judgment of us their descendants; such as, that the tail of a pike, the head of a carp, the back of a tench, and the middle part of a bream, are the chosen morsels of all professors of true gusto. Father Walton can even make "dainty meat" of what the French think so bad that they stigmatise it *un villain*. We have somewhere heard of a quaint direction in one of our cookery books (qy. Mrs. Glass) where it is sapiently premised, "First catch a hare;" then follow the directions how to cook it. This has raised many a smile, nay, some have laughed outright at the good authoress; but we humbly opine that it was without reason. In her extensive readings, to inform herself from every culinary professor, she had undoubtedly ransacked Walton, where she must have been astonished to find that, contrary to the common order of things, this worthy first sat down to dress his chub, and then got up to catch him: in which order his instructions stand in *The Complete Angler*. This appeared to the good lady such a palpable anachronism, that to avoid it, she gave the above very wholesome and prudent advice.

3408. *For dressing the chub* our ancient thus directs: "First scale him, and then wash him clean, and then take out his guts; and to that end make the hole as little and near to his gills as you may conveniently, and especially make clean his throat from the grass and weeds that are usually in it, for if that be not very clean, it will make him to taste very sour: having so done, put some sweet herbs into his belly, and then tie him with two or three splinters to a spit, and roast him, basted often with vinegar, or rather verjuice and butter, with good store of salt mixed with it." Walton afterwards directs that the chub should be newly dressed (*i.e.* cooked soon after killing), at the same time adding a remark, which it would be well that every person concerned in cooking fresh fish should bear in mind, for note, that "lying long in water, and washing the blood out of any fish after they are gutted, abates much of their sweetness." Captain Williamson takes part with the chub, and tells us that, "Just before spawning time, they are worth catching for their roes; which made into a pie, well seasoned, and with a dash of vinegar, are delicious." Mr. Salter considers them much in the light we hold them, "as not very choice food, particularly in summer; but that they are firmer and better tasted during the winter months." They eat better, he says (and we agree with him), while full roed than after they have spawned. The chub spawn fried with the fish at this season will be found very palatable, and always perfectly harmless. Mr. Daniel says, "the roe is exceedingly good, and that this fish (the chub) stewed as a carp will deceive a connoisseur."

SECT. XII. *The Barbel* (*Cyprinus barbus* Linn.)

3409. *Bluish white carp*, with four beards, olive-coloured back, and the first ray of the dorsal fin serrated on both sides. (*Shaw's Linn. Syst.*)

3410. *Barbus vulgaris*. Mouth with four beards, form produced. Spec. char.: length from two to three feet; body usually olive on the back and silvery on the belly; D. 11.; P. 13.; V. 11.; A. 9.; C. 22.; the second or spinous ray of the dorsal fin strongly serrated on both sides. (*Fleming.*)

3411. *The barbel* (*fig. 524*). Gesner's opinion that the name of this fish was derived from the beard-like prolongations pendent from the mouth, is undoubtedly correct. To us it came as a derivation from the Latin *barbatulus*; and a specific translation of the same import has been rendered throughout the countries of Europe, according to the genius of the language spoken in the immediate locality. Thus it is *barbello* in Italy, and we believe in Spain also: in France it is called *barbeau*, where its diminutive is likewise *barbillon*, or a little barbel; all of which are expressive of its *cirri* or beards. The term barbel is carried into heraldry also, and is there applied to head processes likewise, but of a different animal: thus we find that the comb and wattles of the cock, in heraldic emblazonments, are said to be barbel when of a different colour from the rest of his body. Our ancestors had a tendency to the study of Natural History, and thus they made observations on the peculiarities of the animals around them, no less quaint than appropriate. Many of these having been handed down to us, have served to increase our respect for their accumen.

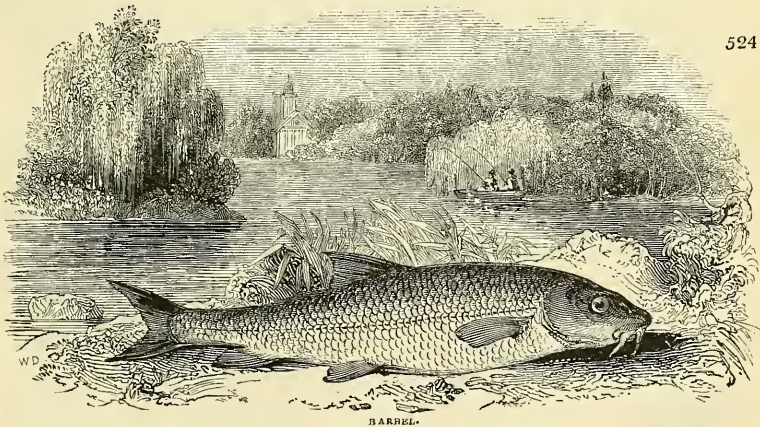
3412. *These characteristics of the barbel* consist in four membranaceous *cirri*, beards, or wattles, two of which hang from the angles of the mouth, and two rather shorter attached to the upper jaw near the snout. The barbel is a handsome fish, in figure not unlike a jack, and is to be found not only in most of our rivers, but in most others also of the middle and southern parts of Europe. It is remarkable among river fish from the prominence of its upper lip; and, indeed, the bony substance of its upper jaw altogether extends beyond the lower considerably, probably for the express purpose of aiding its habits of stirring the ground beneath it in search of worms and insects. Shaw describes "the colour of the whole fish as a slightly silvery grey, with a darker cast on the upper parts, and the scales middle sized, rounded, and well defined; the dorsal fin is rather small than large, situated on the middle of the back, and of a bluish brown colour, with the second ray extremely strong,"

sharp, and serrated on both sides; the pectoral and ventral fins are pale brown and tipped with yellow; the tail is dull, purple, and forked; the snout or upper lip reddish; the lateral line straight."

3413. *To these characteristics we may add*, that the colour of the belly is white, with an elegant slight greenish tint glossed over it. The lateral line, Shaw justly says, is straight, or nearly so; but he omits to notice a striking character of it, which marks the *barbus* as a distinct genus, and assists to show that the rud is not a member of it: we allude to the lateral line being punctated with minute black dots. There is also to be observed (in full grown barbels particularly) an incurvation of the last upper ray of the caudal fin or tail. With this the ensnared fish is able to make a very forcible attack on the line which holds him by a tail-stroke, in which this spinous hook first catches and then cuts it, and such a blow he will very frequently give if the line be allowed to slacken. The serrated dorsal spine, which bounds the second ray of that fin, forms also another offensive weapon both against nets and lines, and sometimes the hands of the angler suffer unless he be careful.

3414. *The situations in which barbel are found* are in the deep parts of rapid rivers; it is but occasionally that they seek the more shallow scowers: they are always in company, and one being taken the chance of taking more is increased: they lurk under the shelter of overhanging banks, and by their vast power in stemming the stream, they are ever ready to catch any displaced insect or small fish; for although they will not take a live bait, there is every reason to suppose that they are truly carnivorous, dead carcasses of all kinds being greedily devoured by them. In the weed-beds of deep waters they lurk also, and appear to revel in hollows surrounded on all sides by rising ground. Under bridges in the strongest currents they may be seen, and counted one by one, apparently lying as fixtures, which has given rise to the custom of letting down hooks fixed on a lead, which dropping among them occasionally fastens one in a *foul* manner, as it is termed. They are unsuspicious in the extreme, and will often suffer themselves while grovelling in the gravel to be caught up in this way. Piles, weirs, and locks, are likewise favourite resorts of theirs. Barbel are much in motion during the night, at which time they principally seek their food, for which their small penetrating eye gives facilities; and if, as already observed, our observations are correct, the internal organisation of their visual organ particularly fits it for crepuscular vision: that they are gifted with nocturnal vision in an eminent degree is certain, from the readiness with which they distinguish and take a bait during night fishing.

SUBJECT. 1. *Barbel Fishing.*



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3415. *Barbel angling* is a favourite diversion with many: the fish being large and handsome, many methods, some fair and a great many unfair, are devised for its capture. In the rivers around the metropolis there are numerous foul practices employed, but we think in variety these artifices are far exceeded in the Trent, Severn, and the Wye, particularly in the latter river; on these practices it is not to our purpose, and certainly not to our inclination, to enter. Two arenas present themselves for barbel fishing near the metropolis, the Thames and the Lea; and in the fishing between the two exists a slight shade of difference. In the Thames the sport assumes a more masculine character — the water is bold, rapid, and deep, and the fish themselves are larger and stronger generally, consequently the tackle used must be likewise stronger, as the resistances employed against it are commonly

greater. In the Lea, although some large fish are occasionally taken, those caught there are more frequently four, five, or six pounds' weight than larger, and we think them by no means such obstreperous gentry as those of the Thames.

3416. *In the Lea, barbel stations or deeps* are found in various spots, from Hackney Marshes to Waltham Abbey; and it is not often that these fish are taken beyond these localities. This angling in the Lea is performed with a light but firm rod, one of cane or bamboo is most common, with a stiff whalebone top, the reel and line *ad libitum*: the latter is however, with the crack sportsmen, usually of platted silk, China twist, or the new variety: the platted kind is however, less likely to kink or tangle than any other. A reed or swan's quill float is attached to a fine but well selected gut line, in which the Lea fishers are much more particular than those who frequent the Thames. In fact, in the former it is science and art against strength and strongholds; whereas in the latter, powerful implements are brought to cope with powerful fish and powerful currents. But it may be observed, that both rivers are frequented by excellent barbel fishers.

3417. *The hooks employed in barbel fishing* by the best anglers are not of the common kind; but, on the contrary, are manufactured for the purpose of much stouter wire than those in use for other fish. It is well known that in bright weather barbel are very shy in their biting; and that, notwithstanding the readiness with which they take any thing offered at some times, at others they are crafty and suspicious in the extreme. In these cases to ensnare them, the bait hook must be concealed perfectly within the bait, which cannot be done unless it be of itself very small: now for the hook to be small, and yet perfectly safe, the fish being large, strong, and obstreperous, it follows that it must be made of increased strength to make up its diminution in size. In streams where the depths are profound, and very large fish are occasionally met with, such hooks are quite essential to sport; and in fact they are used by the best barbel fishers in most of the large rivers in the kingdom, but are more imperiously called for in the deeps and rapids of the Thames than even in the Lea. A larger hook altogether is commonly used in the former; but where increased strength is of much consequence, and increased size is but little desirable, no other should be used. In the Thames barbel are more disinclined to bite, we think, during fine bright weather than they are in the Lea, and other not *direct* tide rivers: in the former, during dry weather, they appear to have completely laid by their appetites, until the rains have thickened the water, and the stream has brought down such a supply of fresh food as has been impounded above by locks, &c.

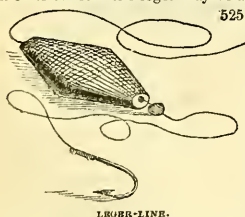
3418. *Barbel suck in their baits*; for the mouth of this fish being small, a large bait can only be taken in by a kind of suction; and thus, when a barbel is well on the feed, it will live and gradually draw in the largest lob-worm, or a huge lump of greaves, until it has gorged it with a full sized hook into the bargain. But when these fish are not well on the feed, they are little likely to employ themselves long in such attempts as are requisite to overcome the resistance of a large bait and large hook; but a small bait on a small hook, that can be snapped up without difficulty, they may be tempted by, particularly when such baiting is very good in itself, and very well shown to them. In dry and bright weather it is therefore essential to use only the *large wired barbel hooks*, and these of a size not exceeding No. 7 or 8. for the Lea, and all other rivers with still deeps, where the fish are not expected to be very large. Some barbel anglers use even No. 9 or 10. hooks, particularly in the Lea. Wherever the water is deep but rapid, a hook of one or two sizes larger may be employed; and for a lob-worm bait, as large as No. 4, or No. 5, which sizes, unless the barbel are very heavy, will be amply sufficient when they are of this kind. In the Thames it is very common to find a lob-worm on a No. 3, or even a No. 2. hook, but where the strong sort is used, we should always recommend for the largest lob a hook not bigger than No. 5, or No. 4, at the most, and even these sizes only after rain, when the water may be a little thickened. The barbel fisher who uses the smallest hooks (provided they be strong) will invariably take the most fish.

3419. *Red worms, gentles, and greaves* may be considered, however, as the stock baits for barbel in those finer fishings which are practised in bright weather and very clear waters; and they will generally succeed better than lob-worms at these times. For the method of baiting with these, we would refer the angler to the section on baits, remarking here only that it is proper to put two red worms on to the hook after the manner already directed: if gentles are used, put three or four on at a time; and when baiting with greaves, cover the hook with a uniform lump. In some of the larger tumbling bays of the river Lea, and at the tails of some of the mills driven by its waters, the lob-worm is more particularly used with effect as a tripping bait; at others two large marsh ones are applied instead of the lob.

SUBJECT. 2. Leger-line Fishing for Barbel.

3420. *The leger-line mode of baiting* being very commonly practised in barbel fishing, probably more so than all other methods put together, we give it a place here; and as we shall have again to mention the leger-line as applicable to other angling so we have given it a conspicuous subsectional niche. The term leger (from *leger*, Belg.) is appropriated to any thing which continues stationary, as a leger-book (sometimes written ledger) is a book of accounts which always remains attached to the counting-house. Walton says, "a leger bait is one that is fixed, or made to rest in a certain place, the fisher himself being absent;" but in the present acceptation of leger bait it is not necessary that the fisher be absent; on the contrary, except in eel and trimmer pike fishing, he is commonly present with his line.

3421. *The leger-line apparatus* for barbel requires a strong rod, a reel, and thirty or forty yards of strong well platted silk line; in salmon leger-line fishing, double this quantity is not too much. The hook line which is to form the leger may be about a yard long; if intended for eels, it should be of gimp throughout;



525 if for salmon it may be of twisted gut, three links twisted above, and two below, and the same for barbel, or of fine silver gimp: to the finer end attach a strong hook of No. 4, 5, or 6. This completed, and the upper end looped, fix on a large split shot about nine or ten inches from the hook, and draw the looped end through a perforated leger-lead or coffin-lead. A bullet bored is better. The leger-trace is now finished, and only requires to be fastened to the reel line by a slip-knot. This leger-line apparatus, it is evident, can readily be made by the angler himself when necessity requires it, by an inspection of the cut (fig. 525.). In other cases, all the articles essential may be met with at the shops for angling-tackle. The coffin-lead itself may be cast, or any other flat-shaped piece of lead might be substituted; but that it be bored is indispensable; for were the lead immovably fixed to any one portion of the line, as soon as the fish attempted to move the bait and found a resistance, it would abandon it altogether.

3422. *To use the leger-line.* When the angler barbel-fishes from a bank, as in the Lea and in many other rivers (which, indeed, is the common method pursued in most of them, except the Thames, Trent, and a few others), it is necessary to have a strong rod; but it should be longer than the barbel rod used in punt fishing, for a reason which will be evident. In punt fishing, the boat is placed exactly across the *barbel ground*,

so that it shall lie directly before the angler, and only a few yards in advance of the point of his rod, which is purposely therefore short and stiff, that it may be handy and under more command. In bank fishing, on the contrary, it is requisite frequently to vary the station, or to go round a pool, or to take a considerable sweep with the lead, which, oscillating under the point of the rod like a pendulum, is then delivered dexterously and lightly just over the surface of the water, short of the fish haunt, when by loosening the hand which embraced the line, the lead will shoot forwards, and gain its proper destination without disturbing the water materially, which is an important consideration. When the lead has reached the bottom, hold the rod so as to keep it as much as possible suspended over the bait, unless it be far out in the stream, in which case elevate the rod to a proper angle with the line. The effect of the leger-line will now become apparent; the lead will fix the bait to the ground, but it will at the same time allow it such motion by the current of the water as will show it advantageously to the fish, while the line, passing readily through the bored lead, will offer no obstruction to the fish when taking the bait. Let the line remain quiet and relaxed, but yet without at all bagging, and when the top of the rod gives notice of a fish being at the bait, after allowing him to fairly take it, strike smartly, and the fish is your own; for the tough membranaceous covering of the mouth is such, that the hold will never tear away. If the fish be large, its struggles will be violent, and if it be not managed carefully it may at once break both rod and line by a stroke of its tail, or it may run itself under a bank, or among piles, or bury itself in a weed-bed: but when there is room for playing a barbel without entanglement, it adds much to the sport to let it expend its strength by running out a quantity of line, still keeping a moderately tight hand on it, to parry the tail strokes or other efforts. In this way, the contest may be carried on interestingly without risk for half an hour or more; but when there are dangers such as those above described, the fish must be strictly confined by a tight line and a rod, elevated to enable the whole to bear the strain equally, as already fully explained.

3423. *Barbel are sometimes angled for with salmon's roe*, and also with cheese paste; we have likewise taken them with pith and brains. In the use of these baits, of course, a violent current is to be avoided; but in a good swim in deeps, with a regular bottom, they occasionally prove killing. Plumb the bottom critically, and sink the hook to within an inch of the ground only, or the bait matter will be rubbed off it.

3424. "*The barbel*," says Walton, "is also curious for his baits, that they be clean and sweet; that is to say, to have your worms well scoured, and not kept in sour and musty moss, for he is a curious feeder; but at a well scoured lob-worm he will bite as boldly as at any bait, and especially if the night or two before you fish for him you bait the place with big worms cut into pieces, and note that none did ever overbait the place, nor fish too early or too late for a barbel. And the barbel will bite also at gentles, which not being too much scoured, but green, are a choice bait for him; and so is cheese, which is not to be too hard, but kept a day or two before you fish for the barbel, and be much the likelier to catch store: and if the cheese were laid in clarified honey a short time before, as, namely, an hour or two, you were still the likelier to catch fish. Some have directed to cut the cheese into thin pieces, and toast it, and then tie it on the hook with fine silk; and some advise to fish for the barbel with sheep's tallow and soft cheese beaten or worked into a paste, and that it is choicely good in August, and I believe it: but doubtless the lob-worm well scoured, and the gentle not too much scoured, and cheese ordered as I have directed, are baits enough, and I think will serve in any month, though I shall commend any angler that tries conclusions, and is industrious to improve the art."

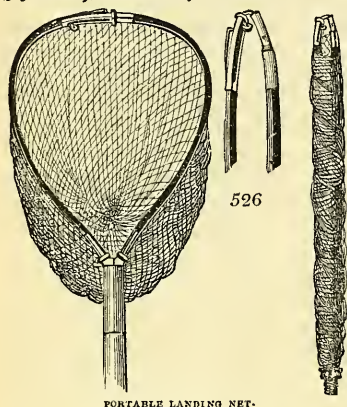
3425. *Barbel punt angling in the Thames*. In all powerful streams, as we have already hinted, this fishing assumes somewhat of a different character from that of the Lea and other rivers of a more mild nature, from the country they run through, and from having less fall to their waters. In the former, the fish are not only larger and comparatively stronger also, but the situations they occupy are usually in the centre of their profound depths and the strongest currents to be met with. In the Thames barbel fishing is again somewhat varied by the necessity for strong tackle, and a boat to reach the fish haunts, which practice is not confined to the Thames, but is resorted to in some other barbel rivers of the kingdom, where the best deeps are in the centre of them. Barbel are, however, occasionally taken in the Thames from the banks of the river, as in the meads of Moulsey, Chertsey Fields; and higher up the river it is much more common, even from the sides of the locks and weirs in its course. The true London angler would nevertheless hardly fancy it was barbel fishing unless he practised it from a flat bottomed boat, called a punt, of which we shall say more when we describe the Thames as an angling river.

3426. *The rod usually employed for barbel* on these occasions is short and strong (*fig.* 477, p. 964), with a winch and free running line of platted silk: a leger bait is very common at these times, of either lob-worms, marsh-worms, greaves, gentles, &c.

3427. *Float angling in the Thames for barbel* is also a favourite practice with some excellent fishers, who by this means have a considerable advantage over that afforded by the leger-line, or stationary bait method; for with the floated bait it is very common to take roach and dace as well as barbel, which greatly varies the practice, and increases the sport; but it is a method principally applied to the more quiet swims. The rod employed is sometimes that already mentioned as used with the leger-line, but one rather longer and more pliant is not only pleasanter to use, but it strikes finer and truer likewise, and as float angling for barbel is altogether one of more skill and nicety than the other, so the tackle should correspond to it. A fine cork float is employed, and a firm gut line; and to strengthen it, if desired, some of the upper lengths may be made of twisted hair. We have used a grass line with advantage, always taking care to soak it thoroughly before our angling commenced. For the reasons already stated, plumb the depth accurately, and fix the bait so that it may in all cases touch the ground. Salmon's roe will frequently take barbel by float angling, and the barbel paste will also occasionally entice them in still deeps: but we consider that red, or marsh worms, gentles, and greaves, are the best baits for barbel float fishing, and it is with these that float barbel angling is generally practised in most of the rivers of the midland counties.

3428. *In Vienna barbel lines are made of fine copper wire*, first burnt, and afterwards slack twisted, and are never longer than their rods: they use a heavy lead, but not pierced, or a hole through it, as ours generally are; theirs is one solid lead, tied to a string or piece of

wire about four inches long, and about six or eight inches from their first hook, as they always use two. When they have hooked a fish, they pull, or throw him out by main force: the general rule with them is never to play a fish." To avoid allowing a slack line in the operation of barbel angling with a float is one of the grand general rules. Let the point of the rod hang as directly over the point of the float as circumstances will permit: the line, if held moderately tight, will give immediate notice of a fish being at the bait by its tremulous motion. Next follows the sudden disappearance of the float, or a dip of the tip of the rod, if there be no float, which will show that the fish has mouthed the bait, and will be the signal for striking. After it has been struck, and sufficiently played, as already directed, have in readiness a *full-sized* landing net, which should be previously attended to, as it is seldom that the usual landing net of the angler will hold in safety a barbel of ten or twelve pounds; for the net should receive the fish fairly within it, or it may otherwise struggle itself out, and many a barbel has so escaped. This affords us an opportunity of noticing a very convenient landing net of the Irish invention made to fold for the pocket, (*fig. 526.*), which may be had of all the London fishing-tackle makers. It is constructed



PORTABLE LANDING NET.

of whalebone, the several pieces of which work on brass hinges, strong, light, and yet sufficiently expansive to take in a full-sized barbel or pike, as also to fold so as to be conveniently carried in the pocket. We have not yet had an opportunity of trying it, but it seems extremely well adapted for the purposes stated. During the fishing, make as little disturbance in the water as possible: we have seen the taker of one barbel ring the knell of all his future hopes, by the unnecessary noise and splashing made by himself, his tackle, and his spent fish, which has driven all the remaining barbel from the spot, although previously there was every appearance of a continuance of sport. This happened once in particular within our sight, and much to our own advantage. Ourselves and a friend had occupied an inferior station from being too late at our post, and we had fished some time without any success.

Very soon after the gentleman alluded to as more advantageously placed than ourselves had landed his fish, which we had observed to each other was done with much more parade and bustle than was necessary or consistent with good angling. In a short space of time the barbel (which were without doubt those driven away from his station) began to assail our baits, and before long we had taken five fish of tolerable weight, while our obstreperous neighbour, we believe, was not treated with another bite.

3429. *Groundbaiting is essentially requisite in barbel angling*, and we recommend that attention be paid to what has been already detailed on that subject, for it is hardly possible to congregate them too early or too often by this means. By *early*, we mean that the ground should be baited the evening before the angler commences his operations; and by *often*, that as soon as he arrives at his destination, his first business should be to throw in a supply of it while making ready, and that this should be repeated at proper intervals. Observe also that the masses of ground bait are so weighted as to sink to the exact spot intended, or they will do harm instead of good by attracting the fish to the wrong spot; and by no means content yourself, brother angler, with the mere bran and clay of the puntman, but carry with you a full supply of those noted by us, or whatever you choose for this purpose, provided that your hook bait and your ground bait are of the same sort, not quality.

3430. *The seasons and times for barbel angling* are likewise necessary to be known to the angler. Unlike the other members of the genus, barbel are not to be taken occasionally throughout the whole year. He must be indeed a good fisherman who could produce a barbel of his own catching at Christmas. From March until November they may be angled for with some prospect of success. Capt. Williamson justly remarks, that "the barbel bites best about sunrise and sunset in warm weather; that he will not touch a bait in general when a cold wind blows, except there is a fresh in the water; and that unless your baits are very neatly set on, notwithstanding his swinish look, he will seldom bite at all. You must not expect them to bite freely before the frosts are entirely gone, and the spring well advanced."

3431. *Barbel*, it is true, can hardly be fished for too early or too late; and it is through want of attention to this particular, that so many luckless journeys are taken by the London anglers to the waters of the Thames and the Lea. On one occasion we had ourselves tried the barbel during the whole of the day without any sport, which determined us to attack them at night. With this intent we retired to our inn, took our own refreshment, charged and primed our boatman, and sallied out at half-past ten o'clock, and at half-past twelve we returned with four barbel. We were in the punt again by four o'clock in the morning: the weather was then *hazy*: a warm sprinkling shower had fallen during our repose, and on our return to breakfast we carried with us five barbel, the produce of one rod. A party in the same inn with ourselves, but not prone to the sin of early rising, had taken two fish the day before, but their disappointment was blunted by the bottled ale, &c. The morning saw them entering their punt at eight, and at ten they also returned with two roach and one small barbel. How they proceeded afterwards we know not, as we returned to London by the Chertsey coach.

3432. *Rain is almost essential to success in barbel angling*. When the weather has continued fine for two or three weeks, the barbel angler, in leaving home to go to any distance at least in search of this sport, should not be sanguine, unless his barometer and other indications promise a fall of rain, and his leisure will allow him the fulfilment of it. But with such prospects let him start, and the longer the rain has been denied, the more greedily will the barbel take all that is washed down by the coming flood. At these times the glut is occasionally excessive, and sixty and seventy pounds' weight have been sometimes taken by a single rod at a fishing.

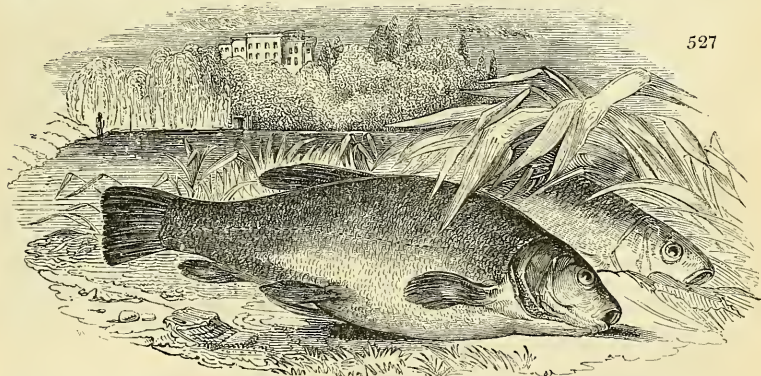
3433. *As an edible*, barbel, like all other fishes, have varied at different periods in the estimation of mankind; few however have eulogised them. On the contrary, they have been very generally acknowledged to be one of the coarsest of fishes: yet Pliny, in mentioning one reported by Martianus to have been caught in the Red Sea, that weighed fourscore pounds, exclaims, "Oh, what a price would he have borne among our gluttons here with us." In England barbel are deemed the very worst of fresh-water fish, and are seldom eaten but by the lower sorts of Jews in their feasts, or by the poorer classes of other people, who sometimes boil them with a piece of bacon to give them a relish. The roe often proves noxious, affecting those unwarily eating it with a vomiting, purging, and a slight swelling.

3434. *The poisonous qualities of the barbel roe*, though now very generally acknowledged, have been doubted. Dr. Shaw says, "It (the barbel) has the reputation of being, in some degree, noxious: the roe, in particular, is said to operate as a very strong emetic and cathartic, and is sometimes taken, in a small quantity, by the country people, for the purpose of common physic; but is observed, in general, to operate rather too roughly. We are assured by Sir John Hawkins, in his edition of Walton's *Complete Angler*, that the flesh itself is not always safe. "About the month of September," says he, "in the year 1754, a servant of mine who had eaten part of a barbel, though, as I had cautioned him, he abstained from the spawn, was seized with such a violent purging and vomiting, as had like to have cost him his life." Notwithstanding this observation, Dr. Bloch affirms, that "the barbel, when not overgrown, is a sufficiently delicate fish;" and even assures us that he "himself, together with his whole family, had eaten the roe or spawn without any bad effect."

3435. *The Jewish mode of dressing barbel*. This fish is brought regularly to market for the use of the lower orders of Jews, who, during some of their meat fasts, eat it as being one of the cheapest kind, being sold to them at two-pence, three-pence, and four-pence a pound, according to circumstances: they dress it in various ways. We were ourselves favoured by a Jewish family with a receipt for the purpose, said to be much in favour with them. Having gutted and carefully cleaned the fish, split them, and cut each side into pieces. Soak in cold water an hour, then rub each piece with salt. After they have remained an hour in salt, or immediately previous to dressing, wipe clean from the salt, and fry in oil. When done remove. To whatever gravy, oil, &c. may be left in the frying-pan, add onions shred fine, over which pour a sufficient quantity of vinegar: simmer all together, and when done, return the fish to this mixture again to warm, and serve up for use, eating it with the addition of any other fish-sauce thought proper.

SECT. XIII. *The Tench (Cyprinus tinca Linn.).*

3436. *Mucous blackish olive carp*, with very small scales, and nearly even tail. *Tinca vulgaris* — the back, dorsal, and ventral fins, dusky; the head, sides, and belly yellowish



TENCH.

green. Spec. char.: weight four or five pounds; body thick in proportion to its length; a minute beard at each side of the mouth; gape ascending; D. 11.; P. 17.; V. 9.; A. 10. (*Fleming.*)

3437. *The tench (fig. 527.)* is considered as an exotic, having been brought to us from the lakes of the southern parts of Europe. It is also native to many other parts of the globe, but inhabiting by choice stagnant waters, on a loamy clayey soil, forming a soft muddy bottom. It is found also in rivers, particularly in such as have but a slight current,

and flow over a soft soil. The tench varies in figure with age, but as a general type it is thick in proportion to its length, as one to three: when very full and well fed, it has been seen nearly as broad as it is long. The head is of a full size, yet proportionate to the bulky figure: the snout is short, blunt, and bounded by a moderate sized and rounded mouth. It has two cirri or beards, being one at each corner of the mouth, which are not however very conspicuous, unless purposely looked for or laid hold of with the fingers. The mouth is destitute of teeth, they being situated, as is common with the carp genus, in the throat. The eyes are rather small, round, and but little prominent; the iris is red, the nostrils are conspicuous, and a little elevated; the gill-covers are of a brilliant yellow. The fins and tail, which are large, are of a dark purplish hue; the tail in figure is nearly equal, or almost without forking: Linnæus has it *cauda integra*, but which certainly cannot be justly said of it: Shaw's characteristic, *cauda subintegra*, is more applicable. By a singular mistake, also, Linnæus describes the tail as having twenty-five rays instead of eleven, which is the usual number. The general colour of the tench is that of a deep olive, with a golden tint shining through its scales, which are small, thin, and closely adherent to the skin: according to Richter, their number is not less than thirty thousand. Willoughby describes the fins of the female as much longer than those of the male. The tench, like the eel, is remarkable for a viscid slime which transudes through the mucous pores, and covers the surface of the scales over thickly: to this are attributed qualities of a healing kind, of no ordinary degree.

3438. *The size which tench attain* appears, as in other members of this genus, much influenced by locality. On the Continent they have been known of twenty pounds' weight. Gesner mentions one which he saw that was a yard long and two feet broad. Salviati also gives an account of one of twenty pounds' weight. With us it likewise occasionally arrives at a considerable growth, but never to equal anything of this kind: on the contrary, the greater number of our tench are from ten to fourteen or fifteen inches in length, or from one to five or six pounds in weight. Choice situation seems not essential for tench, which, on the contrary, are said to love foul and weedy, more than clear, water. Mr. Daniel has taken tench out of *Munden Hall Fleet*, in Essex, belonging to Mr. Western, which was so thick with weeds that the flews could hardly be sunk through them, and where the mud was intolerably fetid, and had dyed the fish of its own colour, which was that of ink, yet no tench could be better grown or of a sweeter flavour: many were taken that weighed nine and some ten pounds the brace; and the skull and back bone of one preserved at the Hall, which was found dead by the side of the water, when compared in length with any one of those before mentioned, must have nearly doubled its weight. In a pond at Leigh's Priory he states, that he caught a number of tench, weighing about three pounds each, of a colour the most clear and beautiful; but when some of them were dressed and brought to table, they smelt and tasted so rankly of a peculiar weed, that no one could eat them: some that were conveyed alive, and put into other water, soon recovered themselves from this obnoxious taint; an experiment that will always answer in this kind of fish, where it is suspected that there is a necessity for cleansing them; and the above circumstance is recited to show, that no decisive judgment can be formed from the external appearance of the tench of their condition, however prepossessing it may appear.

3439. *The account of the celebrated tench of Thornhill House*, in Yorkshire, is notorious to many; but the existence of such a fish is believed by few, from the unfortunate disposition of its owner to gasconade. Mr. Daniel, however, assures us, that the account was correct, and we therefore give it on his authority, which we consider as entitled to every credit:—"The tench," he says, "that has occasioned the most animadversion, is that which the engraving in his work represented, the unusual size and form of which are alike impossible to be accounted for: its bulk, perhaps, exceeds that of any one ever known to be an inhabitant of the most extensive waters of this country, and the shape, which seems to have accommodated itself to the scanty space allotted for its residence, together stamp it a *lusus Naturæ*. Its history is, that a piece of water at Thornhill Royal, Yorkshire, which had been ordered to be filled up, and wherein wood, rubbish, &c. had been thrown for years, was, in November, 1801, directed to be cleared out. Persons were accordingly employed, and, almost choked up by weeds and mud, so little water remained, that no person expected to see any fish, except a few eels; yet nearly two hundred brace of tench of all sizes, and as many perch, were found. After the pond was thought to be quite free, under some roots there seemed to be an animal, which was conjectured to be an otter: the place was surrounded, and on opening an entrance among the roots, a tench was found of most singular form, having literally assumed the shape of the hole, in which he had for many years been confined. His length, from fork to eye, was two feet nine inches; his circumference, almost to the tail, was two feet three inches; his weight, eleven pounds nine ounces and a quarter; the colour was also singular, his belly being that of a char, or a vermillion. This extraordinary fish, after having been inspected by many gentlemen, was carefully put into a pond; but either from confinement, age, or bulk, it at first merely floated, and at last with difficulty swam gently away. It was stated to be now alive and well."

3440. *Tench spawn* during the late spring and early summer months, according to the season and locality; and deposit their spawn about the roots and stems of aquatic plants. The young fry are quickly evolved, and are equally quick in their growth: they breed early, and are more fecund than carp, distinct ova to the number of near four hundred thousand having been counted in a single roe. The tench, like the carp, is very tenacious of life; and may, like it, be transported in wet moss to a considerable distance, particularly when not in spawn. The sanative qualities of the tench have afforded a theme for authors to ring the changes from one to another; and as the assertion is more easily made than refuted, it has continued uncontradicted, though doubted.

3441. *In the piscatory eclogues of Mr. Diaper*, a balmy quality in the tench is poetically described:—

"The pike, fell tyrant of the liquid plain,
With ravenous waste devours his fellow train;
Yet howsoe'er he be with famine pin'd,
The tench he spares, a medicinal kind;

For when by wounds distress'd, or sore disease,
He courts the salutary fish for ease,
Close to his scales the kind physician glides,
And sweats a healing balsam from his sides."

A belief in the healing qualities of the tench towards their fellow fishes was encouraged by the Jewish physicians practising at Rome, and were also considered applicable to mankind. They are said to have ordered the half of a tench cut open to be applied to each sole of the foot in cases of fever. (Jovius, *De Piscib. Romanis*.) The fancied forbearance of the pike towards the tench, as well as the motive of it, is however altogether denied by Mr. Daniel, who, on the contrary, attributes the safety of the tench to its capability of burying itself in the mud. But we can by no means admit the force of Mr. Daniel's reasoning in proof that the tench is safe

from the pike merely because he can escape into the mud ; for if this were his only resource, the carp, roach, bream, rudd, &c. would be equally secure, since they are equally able to imbed themselves in the mud on the approach of danger. We are, however, fully inclined to agree with him, that this security is not so complete as authors state it, though it does appear true that the pike will not ordinarily devour tench. The healing qualities of this *aquatic physician* may be better tested, now that the fresh-water *aquarium* is becoming the study and recreation of so many.

3442. *Mr. Salter's opinion on the tench and pike* however, as a man of veracity and much experience, deserves attention, and leans very strongly to the perfect and uncompromised security of the tench, not only from the fell tyrant the pike, but likewise from all other predatory fish, as the eel, who it must be acknowledged would unquestionably follow him into the mud, where even Mr. Daniel's argument could not save him. "Whether the forbearance of the pike," says Mr. S., "arises from respect to the healing qualities of the tench, or is to be attributed to a dislike of the slimy matter on its body, I know not; but I believe the tench is perfectly free from the persecution of jack and pike, for I have never taken one that has been at all mutilated in its fins, tail, or any other part, or with any of those wounds or scars on the body which are so frequently met with by the angler among the small fish he takes: the eel also foregoes his voracity in regard to the tench, both by night and day. I have known several trimmers to be laid at night baited with live fish, roach, dace, bleak, and tench, each about six or seven inches long, and when those trimmers were examined in the morning, both eels and jack have been taken by the hooks baited with any other fish but the tench, which I found as lively as when put in the river the preceding night, without ever having been disturbed: this has been invariably the case during my experience; neither have I met with even one solitary instance to the contrary related by any of my acquaintance, who had numerous opportunities of noticing the singular circumstances of the perfect freedom from any hostile attack which the tench enjoys over every other inhabitant of the liquid element, arising from the continual conflicts among each other."

SUBJECT. 1. *Angling for Tench.*

3443. *Angling for tench*, although not materially different from that practised for carp, yet is sufficiently so to merit distinct notice. The fish itself does not often fall in the way of the London angler, except it be in preserved sheets of water: in the Thames and the Lea, tench are very scarce. There are a few in the Mole, the Brent, and the Colne, and in the Roding they are still more frequently met with. In the ponds and sheets of water in Wanstead Park they used to abound; and many a pound weight of them we have extracted therefrom before breakfast. They are to be found in the Surrey Canal, but are scarce in the Grand Junction: alas! what fish is there that is not scarce there now; thanks to the sweep-nets of the bargemen! The travelled angler may meet with tench very generally diffused over the country at large in meres, fleets, ponds, and particular parts of the larger rivers of the kingdom, as the Trent, Severn, and Wye. This fish, like the carp, spawns in the spring; but as the precise time depends on agencies similar to those which affect the spawning of the carp, so were the tench as much affected by the process as some fish are, it would prove most inconvenient to the angler who pursues them in different localities, and consequently cannot be aware when they have or when they have not spawned. But as tench are not only less affected in condition, but likewise in their disposition to take a bait at these times, so the uncertainty is not of material consequence: but should the angler take one in very full roe, he would, we hope, desist in his attempts to take more.

3444. *The baits for tench* with the metropolitan anglers are worms, gentles, and pastes. In some counties, caddies, pupæ, larvæ of all kinds, as flag-worms, wasp-grubs, and caterpillars, are used for this purpose, as well as both water and garden snails. Capt. Williamson observes, "Tench do not swallow a bait very quickly, sometimes holding it in their mouths for a while; therefore give them good time, and let them either keep the float down, or, as is often the case, let them rise with the bait, so as to lay your float on the water. This is an excellent sign, and warrants your striking, but rather gently, lest the fish be only sucking the bait, for he will seldom return after it is drawn from his mouth."

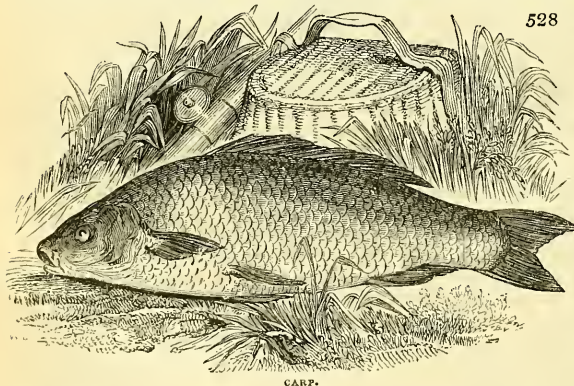
3445. *Tench bite very freely after rain*, and we have been often successful while mild rain was falling in close warm gloomy weather, and that even in the daytime, which is not otherwise common, their principal feeding time being early and late in the mornings and evenings. Worms, particularly the red, are the best spring baits; these are succeeded with the London anglers by gentles, which many prefer moderately green. In the midland counties, caddies and grubs of all sorts are much used in the spring, and wasp-grubs, snails, small white slugs, and caterpillars, during the summer; but not, however, to the exclusion of worms of all sorts and gentles also. Towards the close of summer, pastes prove good baits, particularly those of our list, at the same time groundbaiting judiciously with the meal ground bait; and note, that when angling with gentles you stick a few into a ball of clay and cast in now and then; if angling with worms, do the same with them. It is now to be observed, that although the mouth of the tench will take a moderate sized bait by sucking at it, yet we have seldom had much success with lob-worms; but as other

writers make favourable mention of them, they may be tried. Mr. Daniel, on the authority of Walton, recommends that the worms should be impregnated with tar, which indeed savours of the old school. Tench certainly will not absolutely refuse worms thus flavoured; but we have tried them, both natural and tarred, merely as an experiment, and the former beat the latter, during our trials, by three fish to one. It is the great failing of this gentleman's elegantly got up work, to draw almost wholly on the information of others, and those not always the best authorities, instead of giving us the result of his own extensive experience: we allude now only to the angling part of the work. As a fly angler, it is evident that he had no pretensions; and it was better to affect none: but in bottom fishing he was, we believe, an adept, and should have written with a little more originality. He invariably calls himself a compiler, which is certainly candid, but much was expected of him; and it is to be regretted he should have so studiously acted up to the character. The sporting world would have been better pleased to have known what Mr. Daniel had done, than what he had read.

3446. *The fishing-tackle for tench* should be in the first place, as regards the rod, a strong bottom one; next the float, if for river fishing, ought to be of very fine cork, but if the water be very little disturbed by current, &c. one of swan or porcupine quill is preferable; the line of fine but firm gut hook; No. 6, 7, or 8. In ponds, or other still waters, use a fine quill float, very fine line, and hook, No. 7, 8, or 9. In bold waters, as well as where fish run heavy, let the whole apparatus have rather more strength than here directed, large tench or carp being always obstreperous, and doubly so where the current is strong. The bait used in running waters should drag a little on the ground, and if the fish seem unwilling to bite, let it be raised a little higher: in ponds on the contrary, unless the bottom be very clear, the bait should never actually touch the ground, as it is apt to become buried in the mud, which circumstance can be judged by plumbing. In some situations where tench are numerous, there are many inches, nay feet, of soft oozy mud, which it would be in vain to sink the bait into: the state of the plumb-lead will ascertain this, and when ascertained, let the bait hang at first within two inches of the surface of the mud, and when a little time has elapsed without any symptoms of tench-bites, move it higher up, and if still refused, begin a slow sinking and drawing, which will show the bait to great advantage; and this method often proves very successful when tench are not well on the feed, by exciting their attention, and rousing their energies. In hot weather tench delight in weedy situations at the sides of pools, and particularly among large reeds and aquatic plants: here a long firm rod is useful, and may have attached to it a line (without a float) furnished with a small but strong barbel hook, No. 8 or 9., which should be baited with one red worm well run up the shank, the point remaining to be neatly covered with a bloodworm, with a few fine shot to sink the line. Drop this carefully and without disturbance between the weeds, letting it sink gradually; after a minute draw it up again gently, and whenever an opening occurs do the same, thus roving to every accessible part of the water.

SECT. XIV. *The Carp (Cyprinus carpio Linn.).*

3447. *Yellowish olive carp*, with wide dorsal fin, with the third ray serrated behind. Its characters are thus stated: It stands at the head of a numerous family (*fig. 528.*), characterised by a small mouth,



which is without teeth, their office being supplied by a bony apparatus within the throat, both above and below, which acting against each other comminute the food; the gill membrane is three-rayed, and there is one dorsal fin only. There are more than thirty known species, of which more than a dozen are objects of the angler's pursuit. The common carp appears to be a native of the lakes, ponds, and some of the large rivers of the

southern part of Europe. The year 1514 is mentioned as the period when Leonard Maschal, a gentleman of Sussex, naturalised the tench among us; and although there is little reason to doubt that this gentleman did actually bring carp with him from the south, or import some, yet there is sufficient evidence from the *Boke of St. Alban's*, published by Wynkyn de Worde as early as 1496, that they were then known in England. The learned

authoress, Juliana Barnes, calls it a "daynteous fysshe," although scarce. This being the case, the old distich of carp, hops, &c. &c. loses its metre and its point together. This fish was introduced into Denmark in 1560, and yet only a few years back it was unknown in Russia: we have however reason to believe that it is now become common there also. Sweden has them only in the ponds of people of fashion. They chiefly abound in the rivers and lakes of Polish Prussia, where they are sometimes taken of a vast size: they are there a great article of commerce, and are sent in well-boats to Sweden and Russia. The merchants purchase them out of the waters of the landholders of the country, who draw a good revenue from this article. Dr. Shaw observes, that the carp is said to decrease in size the farther it is removed northward, a fact which we have reason to believe. A similar decrease occurs with regard to many other fishes, which will tend to remove the incredulity sometimes expressed, when accounts are read of fish that here arrive to a few pounds' weight only, but which in more genial climates grow to even some score pounds.

3448. *The usual length of the carp in our own country* is from about twelve to fifteen or sixteen inches; but we have seen them here much longer, weighing upwards of twenty pounds. In warmer climates they grow to twenty, thirty, or forty pounds. Its general colour is a yellowish olive, much deeper or browner on the back, and accompanied with a slightly gilded tinge on the sides; the scales are large, rounded, and very distinct; the head is large, and the mouth furnished on each side with a moderately long cirrus or beard, and above the nostrils is a much smaller and shorter pair; the lateral line is slightly curved, and marked by a row of blackish specks; the fins are violet brown, except the anal, which has a reddish tinge; the dorsal fin is broad, or continued to some distance from the middle of the back towards the tail, which is slightly forked, with rounded lobes. The viscera of the carp present a singular intimacy of connection and blending together: the intestinal canal appears to pass through the substance of the liver, which, and the large gall bladder and spleen, seem to form almost a continuous mass. Can this specialty have anything to do with the intense bitterness and the deep green tinge of the bile itself, an analysis of which has yielded more than a usual proportion of soda, resin, and acrid matter? The carp, and most of the *Cyprinus* genus, have bifurcated air bladders. The third ray of the dorsal fin is strong, and armed with sharp teeth; which kind of defence extends itself through most members of the genus, but is not alike confined to one or more particular fins: in the barbel we have just seen that it extends to the caudal or tail fin.

3449. *The usual food of the carp* consists of worms and water insects. It is a fish so tenacious of life, that it may be kept for a very considerable time in any damp place, though not immersed in water; and it is said to be sometimes fattened with success by being enveloped in wet moss, suspended in a net, and fed at intervals with bread steeped in milk, taking care to refresh the animal now and then by throwing fresh water over the net in which it is suspended. The carp is an extremely prolific fish; and the quantity of roe contained within the female is so great, that it is said to have sometimes exceeded the weight of the emptied fish itself when weighed against it.

The age to which carp attain is very great, and several well authenticated instances are adduced of its considerably exceeding a century at least. Many of those which were introduced into the ponds at Versailles, &c. in the reign of Louis the Fourteenth, are either still in being, or at least were so a very short time before the French Revolution. Dr. Smith in his *Tour to the Continent* mentions them, and observes that they were grown white through age. Buffon assures us that he had seen, in the fosses at Pontchartrain, carp which were known to be of the age of a hundred and fifty years. Others affirm, that they have been known to arrive at the age of two hundred years.

3450. *In Polish Prussia*, and many other parts of Germany, the sale of carp constitutes a part of the revenue of the nobility and gentry, so that the proper management of this fish is reduced to a kind of system, founded on the experience of several generations. Of the methods there practised, we have an account in the *Philosophical Transactions* for 1771, communicated by Mr. J. Reinhold Forster, who says he has seen carp treated and maintained according to those methods above a yard long, and of twenty-five pounds' weight, but had no opportunity of ascertaining their age. "In the pond however at Charlottenburg," he adds, "a palace belonging to the king of Prussia, I saw more than two or three hundred carp between two and three feet long; and I was told by the keeper they were between fifty and sixty years' standing. They were tame, and came to the shore in order to be fed." Carp unfortunately are infested with *lernæ* often: both *tania*, *cucullus*, and other intestinal worms, are apt to infest them. But Walton was over credulous when he asserted that the frog was also an enemy of the carp. In Walton such an opinion, at the time of day he wrote, might be excused; but that Mr. Daniel should also assert this to be a fact, which is known to be only fabulous, is indeed surprising.

3451. *The reproduction of carp* has occasioned some dispute in later times: to our surprise Mr. Daniel says, "they spawn certainly several times in the year." If at each time six hundred and twenty-one thousand are produced, which is the number of ova stated to have been counted in one roe, what then would be the annual produce? Aristotle and Pliny, dealing in fable also after the custom of their times, assert that they breed six times in the year; and the over-credulous Walton, influenced by their testimony, says, "Carp and loaches are observed to breed several months in one year, which pikes and most other fish do not. And this is the rather to be believed, because you shall scarce or never take a male carp without a melt, or a female without a roe or spawn, and for the most part very much." We think it not improbable that carp do not deposit the whole of their spawn at once; and, indeed, from some observations made by ourselves on a

pond stored with carp only (where we could every day by a casting net take as many as we pleased, and after subjecting them to examination, we could return them again without injury), we have been led to suppose that these fish do not complete the spawning process at one time: on the contrary, we think it not improbable that they eject portions of ova only at several distinct periods, and that some weeks even intervene between the first and last ejections. The male carp does the same by the milt; and thus, as the quotation proves, Walton had long ago made the remark, which others since his time have also made, that it is seldom during the spring and summer months that we can take a carp of either sex without finding roe within it. At their spawnings they seek shallow, warm, and sheltered places: the female deposits the spawn where the bottom is somewhat gritty, about the roots of grass, osier roots, hanging branches, &c. The milt or male fish, by a natural instinct, follows the spawner, and the milt or soft roe is spread over the spawn, which thus becomes impregnated. Carp at this season almost any one may have frequently seen swimming, as it were, in a circle about the same spot. The young fry are said to be hatched in little more than a week, and increase so rapidly that, according to Pennant, they under favourable circumstances arrive at a weight of four, five, and sometimes six pounds by their second year, which however will depend as much probably on their freedom from disease as on their local advantages.

SUBJECT. 1. *Angling for Carp.*

3452. *Angling for carp.* We may introduce what we have to say upon this subject in the words of Captain Williamson, who observes, that "He who can command success among large carp (for I look upon the young ones in a very different light), must possess several qualifications extremely valuable to the angler, and bids fair by general practice to be, according to the old saying, 'able to teach his master.'" Under these circumstances, to compete with this wary gentleman, the angler must use very fine tackle only, and very tempting baits: he must also, in the requisite practice, treat him with a double dose of caution and patience. If it be ever compatible with fair sporting to use two or more rods at one time, it is in carp fishing where, except it be upon extraordinary occasions, the artist may require a volume of Sir Walter to fill up the wide hiatus between each capture. If more than one rod be employed, observe that the other or others be so placed as to be secure, and that the running line be completely free, having two or three yards likewise unwound in readiness, or it will be not at all improbable that the first notice the angler receives from one of these gentry, is that of one of his rods being hauled into the middle of the water. Having however the accuracy of Mrs. Glass before our eyes we must first look for the carp before we take him.

3453. *The haunts of the carp of stagnant waters* are, during the spring and autumn months, in the deepest parts, particularly near the flood-gates, by which water is received and let off. In the summer months they frequent the weed-beds, and come nearer to the surface, and particularly are found among aquatic plants, which spring from the bottom and rise to the top. In rivers they are principally met with in the still deeps which have an oozy bottom, with rushes, reeds, &c. as a hide for their spawn. The Thames, the Lea, and the minor rivers around London, afford few carp; and when one is taken, the regrets of anglers are increased at the scarcity of them, from their superior size, flavour, and beauty. In most of the tributary rivers to the Humber, they are also very fine. In the Wye we have taken them very large.

3454. *The angling season for carp* is from February until the end of September: in favourable seasons it is not, however, usual with them to bite freely until March, and then only in rivers. In stagnant waters, as meres, ponds, &c. they seldom take a bait well until April. The rod used should be long and light, but it must also be strong, to resist the powerful play of so heavy a fish: the float must be of quill only, the line of the very best round gut, and as fine as may be. In our own practice we used fine barbel hooks for carp fishing, from No. 7. to 10., which will be sufficiently large even for a small lob-worm, if adroitly put on. By the bye we are not very partial to lob-worms for carp angling, unless they be very small, or the fish very large.

3455. *The baits for carp angling* are worms, larvæ, grain, and pastes. Worms are proper baits for the early part of the season: we seldom ourselves used any other than the red worm except on particular occasions, as in very clear water, and with a probability of the time being near to, or just after, the spawning season, when we baited with two bloodworms on a very small common wired hook of No. 10. size; but carp are, without doubt, taken with all the other varieties of worms also. Mr. Salter recommends a red worm strung on the hook, and a gentle on the point of it. In the early summer months the worm may be varied with caddies, caterpillars, beetles, grasshoppers, wasp-grubs, and turnip-worms. To these, in the order of season, succeed gentles, which some think the fish take best when rather green; but we have never discovered such a preference over those well scoured. Green peas are advocated by Taylor, who claims the merit of introducing them as a bait: but fruits and vegetables have been carp baits long before Walton. Mr. Salter improves on Taylor, and prescribes marrowfat peas, which we think evinces sound judgment in both the giver and the taker. Taylor's plan is to hang one on the hook about a foot from the ground, throwing in a few now and then by way of lure. We have been so often assured by anglers that green peas will take carp, that we are constrained to believe it; perhaps in our anglings with them we forgot the bacon, for these gentry always refused them from our hands; and we likewise thought that we consulted their tastes full as well by a clean morsel of well soaked greaves, which we found to be occasionally a very tempting bait in

the morning and evening of a blustering but not cold day. Pastes sometimes succeed well with carp. Mr. Salter recommends a sweet paste (p. 1029.), and we cordially join in the praise of it from our own experience: we should be sorry to be doomed to eat all the carp we have taken with it.

3456. *Use ground bait for carp* in all cases in which you propose to confine yourself to a determinate place; if you rove, it is better only occasionally to throw in a few grains, and sand with pieces of worms and a few gentles mixed. In a stationary spot regularly groundbait it the night before with a substance that accords with your intended hook bait. Put the ground bait in quietly, and plumb the depth at the time, to avoid all disturbance in the morning. And when the angling commences, if possible keep entirely out of sight of the fish: make no noise; let the bait slide silently into the water; and try their fancy for taking it at various depths, beginning with the lowest. If rain falls lightly, the angler would do well to pursue his practice during the whole day. Sometimes, also, success will attend him through the whole of a gloomy day without rain, but in general cases, during the hot months, it is not possible to fish too early or too late for carp. In a starlight or moonlight night of July, they have been taken after the "witching time" even.

3457. *When the angler perceives a bite*, he must strike according to the nature of his bait. If, for instance, in fishing with a lob-worm, he were to strike the moment he felt the float move, he would but pull the worm out of the mouth of the carp, who sucks it in after the manner of a barbel. On the contrary, if paste be employed, it is prudent to strike on the slightest warning, otherwise the wary animal will suck away all the paste; but with a small hook, and a very slight wrist-stroke, the nibbling fish may be probably struck; or if it be not effectually hooked, the futeness of the stroke will not alarm it, and it will return to the charge. Again, when fishing for carp in rivers, it will be found that the habit of meeting the insects which pass down the stream makes the fish more on the alert to prevent their escape: they take the bait quicker in rivers, for this reason, and they should therefore be struck much quicker.

3458. *Carp as a table fish* are highly prized by some, and nearly as much despised by others. If carp were as plentiful as mackarel or herrings, would as many be eaten? and yet who would dare so to offend the goddess of fashion, as to leave carp to feast on herrings and mackarel? Forbid it, shades of Quin and Kitchener! Forbid it, ye Parisian arbiters of taste, who import into your city eight hundred thousand of these fish annually, drawing them on extraordinary occasions of luxury from the superior feeding waters of the Rhine at a hundred and twenty leagues' distance! Carp differ however much in their qualities: those extracted from rivers are generally acknowledged as the best, though Mr. Daniel says, "they are frequently sweet and well flavoured when taken out of the muddiest ponds, where they have plenty of food, and the stock of fish is not too large; and it is a singularity that these fish put into a stew made in the clear channel of a trout stream shall soon become lean, and acquire the taste we call muddy." Mr. Daniel has previously remarked, that the flesh of carp is wholesome, and, if taken from good water, of a nice flavour; but this is absolutely lost in the rich sauces in which this fish swims upon our tables: a carp plainly boiled will not turn out such insipid meat as is generally thought.

3459. *Walton, in regard to the dressing of carp*, as in many other respects, must be acknowledged the prince of piscatory sports, who caters for our amusement and our stomachs in the same chapter. He it is who teaches us to dispel our ennui in a delightful recreation, and to recruit our exhausted frames from the self-same sources. We will, however, interrupt him no longer. "But first I will tell you how to make this carp, that is so curious to be caught, so curious a dish of meat, as shall make him worth all your labour and patience; and though it is not without some trouble and charges, yet it will recompense both. Take a carp, alive if possible, scour him, and rub him clean with water and salt, but scale him not; then open him, and put him with his blood and his liver, which you must save when you open him, into a small pot or kettle; then take sweet marjoram, thyme, and parsley, of each half a handful, a sprig of rosemary, and another of savory; bind them into two or three small bundles, and put them to your carp, with four or five whole onions, twenty pickled oysters, and three anchovies. Then pour upon your carp as much claret wine as will only cover him, and season your claret well with salt, cloves, and mace, and the rinds of oranges and lemons; that done, cover your pot, and set it on a quick fire till it be sufficiently boiled; then take out the carp, and lay it with the broth into the dish, and pour upon it a quarter of a pound of the best fresh butter, melted and beaten with half a dozen spoonsful of the broth, the yokes of two or three eggs, and some of the herbs shred; garnish your dish with lemons, and so serve it up, and much good may it do you."

SUBSECT. 2. *The Prussian Carp (Cyprinus gibelio Cuvier).*

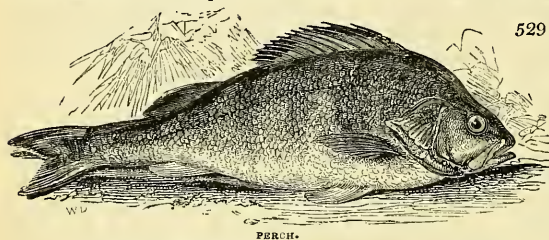
3460. *Yellowish olive carp*, with sub-violaceous fins, straight lateral line, and nearly even tail. This carp variety in the vulgate is often called the Prussian carp. Dr. Fleming, after his systematic headline, gives the following popular notice of it:—"This seems to be the crucian of the British zoology, as stated on the authority of the late Mr. Dryander in the last edition." Indeed, the figure originally given bears so close a resemblance to the *Cyprinus gibelio* of Bloch (*Ich. tab. xii.*), while it differs from the *C. Carasius*, as to leave no room to doubt that Mr. Pennant was originally misled in his inference. He says that "this fish is found in many ponds in the neighbourhood of London." He considers it as "a naturalised species, but that the period of its introduction is uncertain." Naturalists are not, however, altogether agreed on the origin of this fish, some asserting that it was introduced among us more than a century ago from the North of Europe; others that it was more probably

an early inhabitant of our country, an opinion which receives much strength, when we consider that its qualities are not such as to repay any pains necessary to bring it from such a distance, or to bring it afterwards so much into request as it must have been, to become so universal. It is also in favour of its original character, that the old moats surrounding castellated mansions, whose glories have been eclipsed for centuries, and which are now converted into farm-houses or cottagers' dwellings, have very commonly these fish within them. Bloch says, that a hybrid species is often the consequence when the crusian and common carp inhabit the same waters. The noble Prussian carp is of all fishes the best for keeping in the aquarium. The easy, graceful motions, the beauty of its colouring, and its docility (so to speak), make it a pet and a favourite, while its tenacity of life in confinement is another great recommendation. See the *Book of the Fresh-water Aquarium*, published by Messrs. Groombridge and Sons.

SECT. XV. *The Perch (Perca fluviatilis Linn.)*.

3461. *Olivaceous perch*, with transverse semi-decurrent blackish bands; dorsal fin sub-olivaceous, the rest red. (*Shaw's Linn. Sys. Nat.*) Fleming thus characterises it:—Opercle with one spine; the first dorsal fin longer than the second. Spec. char.: length about a foot; back arched, greenish black; sides with five transverse black bands; belly reddish white; ventral, anal, and caudal fins red; irides golden; 1 D. 14.; 2 D. 14.; P. 12.; V. 1½; A. 3; tail lunate.

3462. *The perch (fig. 529.)* is a very extensively diffused fish, being as common to the rivers and lakes of most parts of Europe as it is to those of England. "The body of this fish,"



according to Pennant, "is 529 deep, the scales very rough, the back much arched, and the side line approaches near to it; the irides are golden; the teeth small, disposed in the jaws and on the roof of the mouth, which is large; the edges of the covers of the gills are serrated, and on the lower end of the largest is a sharp spine. The colours

of the perch are beautiful, the back and part of the sides being of a deep green, marked with broad black bars pointing downwards; the belly is white, tinged with red; the ventral fins of a rich scarlet, the anal fins and tail (which is a little forked) of the same colour, but rather paler." The transverse semi-decurrent bands of the perch are usually either five or six, and it is owing to them that this fish when in the water appears very dark coloured, with lightish stripings; but when removed from the water, it is rather of a greenish cast altogether. The first dorsal fin is furnished with spinous rays, which renders it a formidable opponent to its antagonist, and not pleasant to handle by the angler. Internally the mouth is supplied with numerous teeth; the liver is large and undivided; the intestine has but one fold, while the stomach presents a process, and three pyloric *caca*. A variety of this fish is found in Llyn Raithlyn in Merionethshire, in which the back is curiously distorted, but in other respects it resembles the common perch, which are likewise numerous in the same lake; consequently the variety is fixed, and is not accidental, or the members of it would breed with the others. Mr. Pennant was informed that the same kind was to be met with in the Thames near Marlow; and in the *Fauna Suecica* of Linnaeus we are told that it is found also in the small lakes near Fahlán. According to Sir Humphry Davy, the river perch branches out into several other species; for he regrets, in the interesting pages of *Salmonia*, that we have not naturalised the four kinds of them which are natives to the Danube. A still more singular perch anomaly is brought forward by Mr. Daniel, having been taken by him in the docks at Blackwall; these had each a solid mass of fat placed on the ribs, but not adherent to them: the most remarkable circumstance however was, that the stomach, according to Mr D.'s opinion, was wholly impervious, and had not been distended with food for some time. It is our opinion, however, that the fish made their way into the stomach of somebody; and we are equally convinced that a close examination would have discovered the way into the stomachs of the perch also, which were simply corrugated at the recipient orifice, but not closed. Another singular kind of perch, for which we are indebted to Mr. Daniel, is found in Malham Water, not far from Settle in Yorkshire: these grow to five pounds and upwards in weight, yet are all blind of one or both eyes, and therefore might have been advantageously seized on by the punster, who observed of his friend's monocular dog, that he needs must prove an excellent guard, because he would have an eye out on all occasions. The *Perca scandens*, or climbing variety of perch, has been elsewhere noticed. The perch is considered as slow in its growth; but its increase depends much on the nature of its habitation: in ponds, and other small and perfectly stagnant waters, it grows slowly, and seldom arrives

at last to any great size or weight : but in rivers, in estuaries, and particularly in such waters as are subject to the rising tide, and as are slightly impregnated with brackish particles, although without current, they grow fast and become very fat. Thus in the docks at Blackwall, and in Dagenham Breach, they are found to flourish as well as they do in the tideways of the Trent, the Severn, and the Wye, where we have seen them very fine. In large stagnant waters they also multiply if there be plenty of insect food, and the young fry of other fish ; but in ponds they are seldom found large. Among remarkably large perch, we have before observed on one taken in the Serpentine River in Hyde Park, which weighed nine pounds, and another of eight pounds taken in Dagenham Breach by a Mr. Carter. In the *Anglers' Sure Guide*, mention is made of the portrait of one caught near Oxford, which was twenty-nine inches long, and of a proportionate depth ; and supposing such measure to have been correct, the weight must have been very great.

3463. *Perch spawn in the spring*, earlier or later according to the temperature of the water, &c. they are found in, March being considered as the medium of the range. The spawner deposits a kind of glutinous reticular band, in which the ova are enveloped. In less than a fortnight the eggs burst, and the young fry are ushered into life. The perch is gregarious in the strictest sense of the word : a number herd together by a sort of compact, which confines them to situation, to size, and to habit as well as manner ; all are alike : the same hole contains them, and the same swim maintains them ; and if one should be taken, it is the angler's own fault if the whole do not share the same fate. This circumstance is remarkable in a fish of prey, since predatory fish in most instances are solitary ; and is even more singular in one so voracious as to swallow its own eye for a bait, as heretofore stated. The perch is very tenacious of life : a number have been carried sixty miles in dry straw, and were alive at the end of the journey. A curious fact is recorded, which would lead to a belief that these fish are migratory, and that they colonise themselves in new situations on some occasions. It is asserted that all the Irish lakes and the Shannon river became stocked with them at the same time ; but we know not on what authority the account rests.

SUBJECT. 1. *Angling for Perch.*

3464. *Angling for perch* is a favourite amusement with many : it is considered first-rate sport, and so stands high among amateurs. The beauty of the fish, its game qualities, its usual readiness to take a bait, and its value when taken, either as a present for others or as a table fish for ourselves, all render it an object of attention to the angling sportsman. The haunts of perch are varied, since they are both a still and a stream water fish, inhabiting as well clear swift rivers, with pebbly gravelly bottoms, as those of sandy and clayey soils : they love water moderately deep, and frequent holes by the sides of, or near to, gentle streams where there is an eddy, the hollows under banks, among weeds and roots of trees, piles of bridges, or in ditches, and the back streams, that have communication with large rivers. In ponds which are fed by a brook or rivulet, perch thrive very fast : their haunts are *there* chiefly deep holes, between weeds or stumps of trees, or on gravelly scowers. Pools or holes, with a bottom of pure mud, are not however usually to their taste. "Perch delight to lie about bridges and mill-pools ; in and near locks ; about shipping, barges, and floats of timber ; in navigable rivers, canals, and in wet docks : also in the still parts of rivers, and in the back water of mill-streams, as well as in deep gentle eddies, in ponds about sluices and the mouths of outlets and flood-gates, commonly affecting the gravel or sandy parts of the pond."

3465. *The season for perch angling* is from February until the middle of October, during which time they will bite in most weathers, except it be very sunny and bright : but such blustering weather as would prove unfavourable to sport in many other fishings, will not prevent perch from taking a bait well : on the contrary, when it blows a gale from the west or south-west, with a gloomy horizon, they will take any bait almost throughout the day. "At such times, when a dozen or more of perch have been observed in a deep hole, sheltered by trees or bushes, by using fine tackle and a well scoured worm, the angler may see them strive which shall first seize it, until the whole shoal have been caught." Some say that, as regards times, the perch bites best in the latter part of the spring, from seven to eleven in the forenoon, and from two to six in the afternoon, except in hot and bright weather, and then from sunrise to six in the morning, and in the eve from six to sunset. In tide rivers however, and the waters immediately connected with them, as docks, sluices, &c. &c. these general rules as to biting times do not strictly apply ; for it is there during the flow and ebb, when the natural food is principally on the stir, that the fish are most certainly on the look-out for it, let the time be what it may.

3466. *The baits for perch* are principally worms, insects, and small fish, but more particularly minnows. "Of worms, the best kinds," Taylor says, "are small lob-worms, which have no knot, brandlings, red dung-hills, or those found in rotten tan, all well scoured : the hook may be varied from No. 2. to 6." We should rather recommend from No. 4. to 7, or 8. : neither are we very favourable to lob-worms as baits, except where the perch run very large indeed. "The hook," continues our author, "being well whipped to a strong link of gut, with a shot or two a foot from it, put the point of the hook in at the head of the worm, out again a little lower than the middle, pushing it above the shank of the hook upon the gut : take a smaller one, beginning

the same way, and bring its head up to the middle of the shank only; then draw the first worm down to the head of the latter, so that the tails may hang one above the other, keeping the point of the hook well covered. This is the most enticing method that can be adopted in worm-fishing: use a small cork float to keep the bait at six or twelve inches from the bottom, or sometimes about mid-water. In angling near the bottom, raise the bait very frequently from thence almost to the surface, letting it gradually fall again." As a perch bait, Salter, in the spring months, prefers two red worms on the hook to one large one of any other kind, with which we fully agree. Capt. Williamson selects the middle sized brandlings for the purpose, and next to these he chooses red worms, or the "well scoured crowding bob." Caddies, wasp-grubs, and caterpillars, prove good perch baits in some waters; and Mr. Daniel mentions boiled horse-beans as a good lure: but perch are essentially carnivorous, and consequently are not very likely to be often tempted with vegetable matter. It is not a bad method to use two hooks in a water of tolerable depth, with a bullet or plumb; one hook may be sunk to within six inches of the bottom, and the other to about mid-water. In this case two different kinds of worms may be tried, or the upper hook may be baited with caddies or gentles, and the lower with a worm or minnow, or vice versa.

3467. *In the fresh water docks and tideways*, perch fishing often yields excellent sport, and never better than when shrimps are used as baits. In these situations they are the natural food of perch; consequently they prove the most tempting bait, and perch will take them dead, as well as living, when fresh. If living, it is well to preserve them in wet sand in a basket, but by no means to huddle them together in a bag, which soon destroys them.

3468. *A paternoster line* is used to advantage in all deep waters for heavy perch, for as these fish are not groundlings, but rove at all depths, so to meet the full operation of their predatory habits, hooks sunk at different depths succeed in meeting with them in these their wanderings. The number of hooks employed should be regulated by circumstances, but principally by the depth of the water. In docks, and other places of a similar kind, put a small loach or gudgeon on the lower hook, a minnow on the next, and a shrimp on the third: if a fourth hook be employed, bait it with a red worm or a second shrimp. The paternoster should be fitted up with a bored leaden pipe, by which the living fish baits will show themselves well. In other waters not subject to flux and reflux, substitute worms, gentles, or other insect baits, for shrimps. We have, in the absence of other baits, used the fresh-water snails to advantage; and the whiter parts of greaves they will also sometimes accept at the angler's hands. In a bad day it is the practice with some, when the perch will not be thus brought on feed, to take off the float, and extend the line as long as the rod will throw the bait out (which should be worms), without injuring it; cast it in all directions, sometimes across, at others up or down the water, drawing the bait towards you, and working with a similar motion as in spinning a minnow: try not long in one spot: when a fish bites slacken the line, and give time before striking: this often succeeds in bad weather, when all other methods fail, but more especially in a rough southerly or westerly wind. Roving, sinking, and drawing for perch is at some times, as in boisterous weather, the most eligible practice with a strong gut line of about three feet in length without float, but shotted with three or four shot about eight or nine inches from the hook, which may be No. 5 or 6, according to circumstances. Attach this roving apparatus to the reel line, and bait the hook in any manner that may be deemed eligible; probably worms will prove the most so as a general bait, placing on the hook either one large or two small ones, as directed under worm baits. Being thus prepared, draw out as much reel line as can be managed to be cast out before the angler; and if the wind be behind (and it is at such times that this kind of fishing is the most successful), the bait may be carried to almost any distance: allow it to sink to the bottom, easing it down in the most natural manner; then draw it upwards, and again sink it, but dexterously give it, at each sinking, a new direction, thus roving hither and thither.

3469. *Living fish* however are the most killing of all the lures used to entrap large perch, and of these none equal the minnow. In the section on live baits, the angler may find the proper methods of applying the minnow, stickleback, and other small fish to this purpose. The stickleback, with its spines cut away, proves a fair bait in meres, fleets, and other large waters, where the minnow is not to be obtained. Loaches, bull-heads, and small fry of all sorts, may be used also under such circumstances; small frogs are likewise so employed, and by some anglers are very highly spoken of. In using the living minnow Taylor directs, "If the angler roves with a minnow, let it be alive (and by putting them as soon as caught into his minnow-kettle, and placing them in the stream, they are easily preserved), and the hook stuck in under the back fin, or through the upper lip; let the minnow swim in mid-water, or rather lower: use a cork float of a size that he cannot sink it under water, with a few shot, about nine inches from the hook, to keep him down, or, when tired, he will rise to the surface. When using the frog, put the hook through the skin of its back, and it will swim easier than if the hook was thrust through the skin of its hind legs: recollect to keep this bait as far from the shore as possible, for it will constantly be making to it: always give line enough at a bite, to let the perch gorge. May and June are the best months, as the perch are then prowling in search of the young fry of dace, roach, and other fish. Where pike are suspected to haunt, the hook should be fixed to gimp, as in this way of fishing they will take the bait as well as the perch." For taking perch, some anglers affix the bait by two hooks, one inserted at the root of the back fin, and the others attached to either the gill lip or nostril. We think this by no means a bad plan; but on the contrary, that it increases the chance of fixing the fish when it only makes a snatching bite, as is common when perch are not well on the feed:

but observe, with two hooks, let them both be small, not larger than No. 6., and if they are No. 7. of barbel wire, we think it will be all the better.

3470. *Minnow trolling and roving for perch*, as directed in pages 1017, 1018., is also practised with a fine gorge-hook, and often proves very effective on a blustering day; but it should be done with strong tackle and gimped-hook if there be pike in the water, for on such a day they would certainly be ranging and on the feed, and without this precaution they might destroy the tackle.

3471. *Minnow spinning*, as directed in pages 1023, 1024., has similar advantages; for when it would be comfortable to stand waiting the success of the live float bait, this will keep the body in motion. Full directions relative to both these methods are given in our section on live baits. The rod need not be varied: it is however necessary it should be stout; and at the same time it is convenient that it should be light; and in both roving and minnow spinning it ought to be long also: but this subject has been so often touched on, and in the outset so fully considered, when we treated particularly on the rod, that more is unnecessary here. It is perhaps equally so to remark, that perch fishing without running tackle for any thing *but sprat-perch in a duck-pond*, would subject the angler to the loss of fish, tackle, and reputation.

3472. *On the gastronomic properties of the perch*, whoever has heard of the broiled perch *flûches*, and *water souchy* of Sir Bamber Gascogne's cooking, would not hold us blameless were we to be totally silent. This fish has indeed stood the test of time, and has been as little subjected to the mutations of fashion, perhaps, as any one of the funny tribe: it was highly esteemed by the Romans, as we are informed by Aristotle, and its praises were sung by Ausonius:

“Nec te delicias mensarum, Perca, silebo
Amnigenos inter pisces dignande marinis!”

SUBJECT. 2. *The Ruffe (Accrina vulgaris Cuvier).*

3473. *The ruffe, or pope (Perca cernua, Linn.)* is known as the sub-olivaceous perch. speckled with black, with fifteen spines on the dorsal fin. It is about the size of a gudgeon, and will not detain us long. It is found in shoals in the Thames and other tributary rivers. The head is rather large and a little flattened; the teeth are very small, and placed in rows. “It is,” according to Mr. Pennant, “marked on the jaws with a double course of half circles; the upper part of the eye is of a dark brown, the lower part somewhat yellow, and the globe of it black. The principal spawning time of these fish is the beginning of April; but some are said to spawn again in October; and in the *Elements of Natural History* they are said to deposit seventy-five thousand ova. Angling for them is not without its interest from their eager biting, and the method pursued to take them differs very little from that of gudgeon fishing, and they are found where the water is deep, quiet, and runs over a loamy bottom. But this does not agree with our experience altogether: they certainly frequent deep and gentle eddies; nevertheless, the bottom they prefer is sandy or gravelly; and indeed we never found them in perfectly muddy pools, or entire stagnant water. The bait used to take them is principally red worms, with a hook of No. 8, 9, or 10., which should trip along the ground as for gudgeons. Ground bait may be used also in the same manner, and of the same nature; but is not, perhaps, so necessary as with gudgeons: neither is raking practised. Ruffe form a good table treat, broiled in buttered paper.

SECT. XVI. *The Trout (Salmo fario Linn.)*

3474. *The Common Trout.* Body with red spots on the lateral line; tail slightly forked; length about a foot; colour, dusky above, with purple and red spots; beneath grey; head blunt; D. 13.; P. 13.; V. 9.; A. 9.; C. 25. (*Fleming.*)

3475. *The trout of our waters* (*fig. 514. p. 1075.*) is known among ichthyologists as the yellow grey salmon with red spots, having the lower jaw rather longer than the upper. There are other species or varieties found in the list of naturalists, but this is the one recognised by anglers emphatically as *the trout*. Occasionally it has been taken of ten and twelve pounds' weight; and sometimes more, but a four or five pounds' trout is considered a very good sized fish, and one more often sought for than taken. In the midland counties, where it thrives, according to its habit of feeding and the nature of its food, it becomes somewhat varied in figure; but principally it admits of considerable variety as to the tinge both of its ground colour, and spots. Its general length is from twelve to fifteen or sixteen inches, and its colour yellowish grey, darker or browner on the back, and marked on the sides by several rather distant, round, bright red spots, each surrounded by a tinge of pale blue grey. Sometimes the ground colour of the body is a purplish grey, the red spots much larger, more or less mixed with black, and the belly of a white or silvery cast. The fins are of a pale purplish brown, the dorsal fin marked with several darker spots: the head is rather large, the scales small, and the lateral line straight. The female fish is of a brighter and more beautiful appearance than the male. (*Shaw.*) To this description it may be added, that the head of the trout ends in a blunt snout and wide mouth, which always gapes after death, which, on inspection, shows it to be throughout thickly studded with teeth, that incline inwards on the jaws. The eye is of a moderate size but expressive, the pupil encircled with red, and the iris of a silvery tint. The sides of the body present, in varied shades, yellow, green, and rose colour: towards the back is seen a bluish ground, studded with brilliant red spots. The fins partake of the richness and variegation of the general colouring, the pectorals being of a brown, the ventrals red, the anal partly purple, and partly of an ochreous grey. The tail is brown also, and presents a kind of furrow, with

its rays rounded, but not exactly confined to twenty-five in number, being occasionally more or less by two or three.

3476. *The adipose fin* is a striking characteristic of the genus *Salmo*: its use is unknown to us, and although it is called a second dorsal fin, it ill merits the name, as it is without motion and rayless, being a simple membranous and fatty excrescence of a yellowish colour, with a vermilion edging. Notwithstanding this general description, it is to be remembered that the tintings of trout vary probably more than those of almost any other fish.

3477. *Locality has a great influence on trout.* Sir Humphry Davy met with trout in the river Boyle in Ireland, which were coloured with red and brown tintings; but these, though in good season, were yet wholly without red spots. At the same time he observes, that one of his friends, an excellent angler, had made some experiments on the fat of fish, the result of which went to prove that the red hue of trout, salmon, and char, was to be attributed to a peculiar coloured oil, and that the colour may be extracted by alcohol. If this should hereafter appear to be the case, we shall have in future no difficulty in accounting for the decrease in the red complexion of trout when they are emaciated by spawning, or when they inhabit waters unfavourable to them. The spots of trout are certainly influenced much by the nature of their food; and the scientific baronet thinks that their feeding on minnows has a tendency to produce numerous black spots instead of red; he instances the trout of the Colne in proof of it, where minnows are plentiful, and the fish excellent. We have angled much in that river, but we do not think the observation applies to it universally; partially it does, and the *Thames* trout also, when large, have only black spots. When shell-fish are the principal food, he thinks red spots predominate; and the gillaroo and char are certainly corroborative instances, being remarkable for the number and brightness of their red spots, as well as the redness of their fins.

3478. *Variations in the form as well as of the colour of trout* are produced by the same agencies, and it is probable that a long continued action of these causes has the power of establishing new and permanent characters. Mr. Pennant seems of the same opinion, and expresses himself to the effect, that the numerous varieties observed in trout may all be reduced to one species. "In Lyndivia," he tells us, "a lake in South Wales, there are trouts called *coch y dail*, marked with red and black spots as big as sixpences; others are unspotted, and of a reddish hue, that sometimes weigh near ten pounds, but are ill tasted. In Lough Neagh, in Ireland, are trouts called there *buddaghs*, which not unfrequently weigh thirty pounds; but it was not my fortune to see any during my stay in the neighbourhood of that vast water. Trouts (probably of the same species) are also taken in Ullswater, a lake in Cumberland, and these are of a much superior size to those of Lough Neagh. The latter are supposed to be the same with the trout of the lake of Geneva, a fish that many who have eaten it think but a very indifferent one." A variety of the trout is found in the river Eynion, not far from Machynlleth in Merionethshire, and in one of the Snowdon lakes. The trout of this variety are all of them naturally deformed, having a strange crookedness near the tail, resembling that of the perch before described. We dwell the less on these monstrous productions, as the Honourable Daines Barrington has already given an account of them in an ingenious dissertation on some of the Cambrian fish, published in the *Philosophical Transactions* of the year 1767.

3479. "*The stomachs of the common trout,*" Mr. Pennant tells us, "are thick and muscular, which is not to be wondered at when we consider that they feed on the shell-fish of lakes and rivers, as well as on small fish. They likewise take into their stomachs gravel or small stones, to farther assist in comminuting the testaceous parts of their food. The trout of certain lakes in Ireland, such as those of the province of Galway and some others, are particularly remarkable for the great thickness of their stomachs; which stomachs, from bearing some slight resemblance to the organs of digestion in birds, have been called gizzards. The Irish name the species that have them *gillaroo* trouts; and so remarkable are they, that these stomachs are sometimes served up to table under the former appellation. It does not appear to me that the extraordinary strength of stomach in the Irish fish should give any suspicion that it is a distinct species: the nature of the waters might increase the thickness; or the superior quantity of shell-fish, which would more frequently call for the use of its comminuting powers than those of our trout, might occasion this difference. I had an opportunity of comparing the stomach of a great gillaroo trout with a large one from the Uxbridge river. The last, if I recollect, was smaller and out of season, and its stomach (notwithstanding it was very thick) was much inferior in strength to that of the former; but on the whole there was not the least specific difference between the two subjects."

3480. *The general figure of the gillaroo trout* is described by Sir Humphry Davy as differing somewhat from the common trout, as well as its stomach; some caught in Loch Melvin, near Ballyshannon, were broader and thicker than trout usually are; they had also more red spots, with a yellow belly and fins. These stomachs, our author states, had altogether, as far as his observation went, shell-fish in them; yet he adds, that the gillaroo rise as freely to a fly as the common trout they were mixed with, which latter, we are informed, contained no shell-fish: in our opinion, however, the learned author is not correct in lean-

ing to a supposition, that common trout do not take in shell-fish. At some seasons our own experience convinces us, that shell-fish, as the *Palludna*, *Helices*, &c. &c. form a considerable part of their food; and that it is expressly to act on this hard food that the common trout has a very thick muscular stomach also, though certainly it is one with a substance and force less by two-thirds than that of the gillaroo. Sir Humphry Davy, however, seems rather to incline to an opinion, that the gillaroo is specifically distinct from the common trout. "I have caught with a fly," he says, "some not longer than my finger, which have had as perfect a hard stomach as the larger ones, with the coats as thick in proportion, and the same shells within, so that this animal is at least now a distinct species, and is a sort of link between the trout and char, which has a stomach of the same kind with the gillaroo, but not quite so thick, and which feeds at the bottom in the same way. I have," he adds, "often looked in the lakes abroad for gillaroo trout and never found one." (*Salmonia*.) It is, however, much more in accordance with physiological principles, as well as known analogies, to consider the stomach of the gillaroo as having been progressively acted on by the situation the fish occupied, which principally affording crustaceous food, has gradually worked a corresponding change in the digesting organ destined to act on such hard substances. The gillaroo is now therefore no longer considered by naturalists to be a distinct species, but is regarded as the common trout only, whose organs have submitted to the powerful agencies of time, place, and food. This subject has however, if we recollect rightly, been already touched on in the *Anatomy and Physiology of Fishes*, p. 937.

3481. *The black trout* is a variety engendered by long confinement to particular spots, as to some of the lochs in the northern parts of Scotland and Ireland; and from our own observations we can bear out Captain Williamson, who thus describes this fish:—"It is remarkably handsome, its back being of a deep tawny hue, its sides partaking somewhat of the same cast, but brightened by a rich yellowish tint, that relieves its appearance considerably. The spots are of a crimson, and of a deep gold colour; and the lateral line, as well as the head, bear some dots of a smaller size, but at least equally rich. The tail and fins are yellowish red, and, when in season, are somewhat speckled. In the water, this fish is actually beautiful; its very short head, broad tail, large fins, and great depth, give it a certain resemblance to the carp. Black trout are in season at the same time, and indeed, in most circumstances, correspond with the common trout: they are, however, more powerful, and greater strugglers, rendering it indispensably necessary to use them very gently."

3482. *The small beck, burn, or mountain trout*, is also a diminutive variety, seldom weighing more than a quarter of a pound. Confined in its growth, and in its multiplication likewise, by the scantiness of its supply of food, it is nevertheless probably descended from the active monarch of the river, and its primogenitors rioted in the fulness of bulk and the pride of beauty, though the descendants are now dwindled to pigmies, and are as dingy as the peat mosses can make them. Our best authorities seem to maintain, that these several scions are derived from one common stock, and that the magnificent *Benacus* of the ancients, the *Salmo furio* of the moderns, which in some of the continental lakes arrives to the weight of sixty or seventy pounds, may be the type of all the species. The subject is, however, beset with difficulties, that even the accuracy and research of the most observant naturalists cannot as yet conquer; for such is the power of the animal frame to adapt itself to contingencies, and to alter itself to meet the circumstances around it, that useless parts are curtailed, and necessary parts added, for the purposes of the body. Such changes we have shown to happen in the general contour, the colour, bulk, and even the placing of the muscular masses; and it would seem, also, that they occur in some degree in the organs moved by these masses: thus Sir Humphry Davy observes, "I have known the number of spines in the pectoral fins different in different varieties of trout; I have seen them twelve, thirteen, and fourteen: but the anal fin always, I believe, contains ten or eleven spines. The smallest brook trout, when well and copiously fed, will increase in stews to four or five pounds in weight, but never attains the size or characters of lake trout." We shall have occasion, when treating of ponds and stews, to further notice how alterations may be effected on the qualities of trout by external agencies, particularly those resulting from the waters they inhabit. Sir Humphry Davy, in one of his lectures at the Royal Institution, on the chemical nature of soils, has observed that the waters which flow over calcareous beds are particularly favourable to the perfecting of the trout frame; and the superiority of these fish in Ireland has been attributed to the circumstance that so many of the Irish rivers flow over limestone beds.

3483. *In its habits*, the trout is predaceous and solitary. It shuns the sight of man; and yet instances of a subjugation of its timidity and wildness have occurred, one of the most interesting of which is related by Mr. Daniel:—"A recent proof of the familiarity of a trout occurred in 1808. The garrison of Dumbarton Castle, in Scotland, was thrown into general lamentation by the sudden loss of its *oldest veteran*, who had served therein, a general favourite of the various regiments who annually change their quarters, while he remained on permanent duty, without any alteration in rank or condition, for the long period

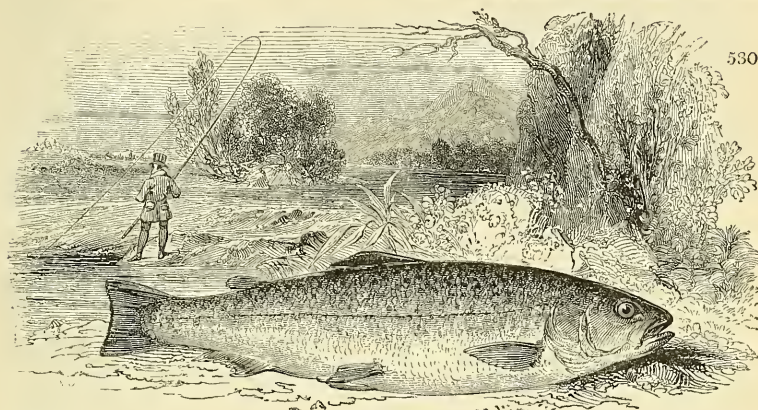
of twenty-eight years. He was, however, always deemed an odd fish, being neither more nor less than a trout, which having been caught by an officer in the river Leven, was brought alive and put into the garrison well, that flows to the surface, where in time it became so tame as to receive its food of bread, &c. from the hands of the soldiers, in the water. When first taken it weighed little more than a pound, and (from the quality of the water, as is supposed) it never afterwards increased in size. The loss of this extraordinary favourite was, we are told, much regretted by those who compose the present garrison of Dumbarton Castle, and will probably be so by many others, who in former years have been equally diverted by the pleasing intercourse with their aquatic comrade." The favourite resort of the trout is generally to clear, cold, and quick running streams, with a stony or gravelly bottom. They are also found in lakes, and will even live in more still and confined waters, but in none that have not the mass of their fluids continually in a state of change, by means of brooks running through, or springs arising up within them. The trout lives, says Dr. Shaw, on worms, small fishes, shell-fish, and aquatic insects, and is particularly delighted with the winged tribes of them, more especially with the *Ephemera* and *Phryganea*, and their larvæ. It generally spawns in September, or in the colder parts of Europe in October, and at those times gets among the brooks or sandy shallows in order to deposit its eggs, which are observed to be far less numerous than those of other river fish. "Yet the trout," as Bloch observes, "is a fish that admits of very considerable increase, owing, no doubt, to the circumstance of most of the voracious kinds of fishes avoiding waters of so cold a nature as those which trout delight to inhabit; and their increase would be still greater were they not themselves of a voracious disposition, frequently preying even on each other.

3484. *The spawning time of the trout*, however, we hardly think to be here correctly stated: we cannot deny that trout occasionally spawn in September; we have ourselves taken them full roed in that month, but it was a very rare occurrence. Towards the end of October many trout will have spawned, but many more will have yet to go through the operation in November; and we have now and then taken one which had not completed the generative process even in December. The author of *Salmonia* says, that from the middle of November till the beginning of January is the trout spawning time, their maturity of roe depending upon the temperature of the season, as well as on the nature and quantity of their food; and he might, we think, have added, as one of these contingencies, the size of the fish also; for we have observed, as a general fact, that the smallest individuals of the species spawn the first. In some rivers trout begin to spawn in October, but November is the chief month: in the end of September they quit the deep water to which they had retired during the latter part of the hot weather, and make great efforts to gain the source of the currents, and having reached the end and sides of a stream, or the gravelly bottoms of shallow running waters, they therein make themselves beds and deposit their ova. They are often found in whirlpools, in holes into which sharps and shallows fall, and near to locks, flood-gates, and weirs, also under bridges, or between two streams running from under their arches, and likewise in the returns of streams where the water seems to boil; in the decline of summer they are to be found near mill-tails.

3485. *In some rivers they appear to come into season sooner than in others*: we have observed this in some parts of Wales. Mr. Lascelles says the same of the Driffild in Yorkshire: equally various are the times of their preparing for the work of propagation, or getting out of condition, for these terms are in fact synonymous. Early in September they will leave some waters and seek the brooks and mild sandy shallows in creeks, &c. where the knowing angler often follows them and entices them with the gentle: but hold, angler! 'Thou shalt not take the dam with her young.' They are now not worth the taking; they are insipid to eat and powerless to contend; you can therefore reap neither profit nor credit in the pursuit. A trout may be known to be in full condition when the head is small and the body oval, the flesh of a deep red, and the general colour that of a deep olive above, and of a bright silver below, with the spots brilliant and distinct. These appearances are most observable in the trout of quick streams, and in such as have a plentiful supply of minnows and other small fish. The May-fly season also produces in them great strength and fulness. The relative proportions between the weight and dimensions of trout vary much when they are in season and when they are out; on which subject, as one that it is convenient to the angler to be enabled to form a correct judgment upon, some rules are given. A trout we took in good condition, from a water very justly celebrated for the excellence of the fish of this kind it yielded, weighed one pound eleven ounces, and measured seventeen inches in length. Another, weighing two pounds, was nineteen inches long; and these proportions are not uncommon. Locality has, however, much influence on the proportions, colour, and even habits of trout. In small rapid streams they often breed prodigiously, but seldom arrive to any considerable size, although their flesh is a bright red, and remarkably well tasted. The head is small, but the body is deep, and the fins are tipped with a golden hue; the scales are small, the sides are yellow, and when in full season are often spotted over with red and black dottings. Such are found in great numbers in many rivers of South Wales, particularly in Lake Llyndivi.

SUBJECT. 1. *Bottom Fishing and Minnow Spinning for Trout.*

3486. *Angling for trout* is a very favourite amusement with many (fig. 530.) Few fish afford the angler such diversion as the trout, or require more skill to take them; and such



TROUT FISHING.

is the passion to fish for them, that the liberty of angling in some of the streams in the adjacent counties is purchased at the rate of ten pounds per annum by the *amateurs* of the metropolis: we might add, that hundreds of London anglers quit the town, during the spring months and visit the different rivers throughout the kingdom, principally for the gratification of trout fishing in various ways. Fly-fishing is a very attractive mode, on which we shall treat somewhat largely and separately hereafter. It will be our present object to describe the angling practices below the surface of the water. Trout begin to take a bait on or near the ground early in the year, and before March will readily take most bottom baits all day long in favourable weather; but as the summer advances, it is only very early or very late in the day that they will take a bait near the ground, they being at the intermediate hours more disposed to rise to the surface for winged insects. In March and April use the worm in the forenoon, and a fly or minnow, according to the state of the water, the rest of the day, in the swiftest and sharpest currents, provided the day be warm and bright, and in the deeps early and late; but if the water be discoloured or very thick, try the gravelly shallows near the sides and tails of streams with a worm only, to run on the bottom with one large shot a foot at least from it. When there is a small *fresh*, or the water is clearing off, and is of a dark brownish colour, first use the worm, which should be a well scoured brandling, cast in as a fly at the head of the stream and move it gently towards you, still letting it go down with the current so as to keep it a little under water; the line should be rather short with no lead upon it, and the hook fine; then try the minnow, and as the water clears, the artificial flies should be tried. In fishing for trout with the worm use running-tackle, and employ a strong line, but let its strength consist in the excellence of its material rather than its bulk, to which end the hook should be small, the gut fine, the shooting fine also, and let the whippings be well concealed, for in bright water trout are singularly wary and suspicious. In some few instances a float is indispensable, and when such is the case, let that likewise be as light and fine as the water will allow: in many cases, however, a float is unnecessary in trout fishing, and a *tripping bait* without one is commonly to be preferred, which is thus managed:—Make use of a rod from fourteen to sixteen feet long, firm but light; draw out as much reel line as with the gut link will altogether reach somewhat beyond the length of the rod, if it be longer it will be unmanageable, if shorter it will not give all the scope or range it ought; the hook may be No. 5, 6, or 7., according to circumstances. In a late very well got up edition of Bowlker, the following, evidently borrowed from Salter, and embodying some of the best rules for worm-fishing for trout, is introduced:—"Bait with either one lob-worm, two small red worms, or two brandlings, all of which are required to be well scoured and very lively, for a trout will not touch a worm that is half dead, or in any way mangled or dirty: put the lob-worm on the hook in the following manner,—enter the point of the hook about a quarter of an inch below its head, and carry it down to within the same distance of its tail, keeping the point of the hook completely hid in the worm: if two small red worms or brandlings be used, run the point of the hook in at the head of the first and bring it out about three parts down its body, then draw it carefully up over the arming or whipping of the hook while you put on the other; put the point of the hook into the second somewhat below the middle, and

carry it near to the head, then draw the first worm down to join it." Marsh-worms, or gilt tails, are frequently used in the same manner.

3487. *When angling with any tripping bait*, be it worm, caddies, or gentles, it is necessary to have as many shot on the line, about nine inches from the hook, as will readily sink the bait; because, if the stream be rapid, the bait is carried away without touching the ground, consequently there is but little chance of a trout taking it. While thus fishing with the running line, keep as far from the water as you can, and let the bait be carried down by the stream into the trout haunts, and when a fish begins to bite, do not strike the first time you feel a slight tug, but rather slacken the line; and when you feel one or more sharp tugs together, then strike smartly: if it is a heavy fish, do not be too eager to land it. It may be added to these directions, that when a lob-worm is used as a *tripping bait*, no shot are necessary on the line, the weight of the worm itself being sufficient, and the absence of the shot advantageous: allow the worm to roll of itself over the ground, which it will do when unencumbered with shot in the most natural manner; and where there are large trout, this bait so managed often proves irresistible. As a general rule, lob-worms are most adapted for deeps, and coloured or thick waters, and red worms and brandlings for brighter waters and depths not so profound. It will be found an excellent plan, when a bank overhangs a supposed trout hole, to cast a worm over the edge of it without approaching near; the line should be unshot, letting the worm roll naturally off the bank into the water, when if a trout be there, it will be taken almost to a certainty.

3488. *The niceties of worm-fishing* are so hit off in the following lines from a most determined and excellent practitioner of this method, that we cannot forbear presenting them as a wind-up:—"Trout are to be taken in bright water and weather with the worm, when they will not touch either minnow or fly; and there is certainly more art and sportsmanship in fishing with the worm at that time, than some people imagine or acknowledge. When to the advantage of bright weather are added those of clear and shallow streams, much artifice must be employed. Your tackle must be very fine, your hook small (No. 5, 6, or 7.), and your baits well scoured and lively. A winch will enable you to vary the length of your line as occasion dictates; and though in general it must be as long or longer than your rod, yet where there is wood, &c. &c. you may by shortening it get at the holes, and still contrive to keep *out of sight*, for completely so to be must never be forgotten,—kneel, stoop, or stand—*out of sight* you must be; and then, if you can lightly and neatly drop in a lively brandling near the likely holds or haunts in a strong stream, especially near the top of it, let the sun shine ever so bright, be the wind rough or calm, and the water ever so clear, you will kill fish when they are not to be taken by any other mode."

3489. *Worm-fishing in the wide open waters* of some of the rivers remote from the metropolis, particularly in the mountainous parts of Wales, Yorkshire, Cumberland, Northumberland, &c. &c., where we have pursued it in its highest perfection, is indeed a most interesting practice. There, knee-deep in the broad expanse, with a rod sixteen or seventeen feet long, light but firm, and fitted with a small winch and running line, having appended to it three yards of gut, strong above and fine below, its white glare having been taken off by a tea infusion, and then finished by a No. 7 or 8. hook, which we will suppose baited with a well scoured red worm,—so accoutred, brother angler, you are deserving of sport; and to obtain it we further recommend you to proceed thus,—draw out as much line as you can manage, and casting the bait up the stream, or rather giving it a very slight inclination to the one side or the other, allow your bait to roll along the ground by the force of the stream. Two small shot are sufficient to weight the line if the water be shallow; if deeper and strong, add one or two more, but still fish as fine as you can. Direct the worm into every likely spot, but particularly whenever a curl in the water betrays an eddy, or wherever its direction tends to bring down the food into a hollow below, or around the edge of the larger of the numerous stones and rocks which start up in these wide streams. When a fish is felt, throw up the hand and strike nearly upright, that you may fix it firmly; by which practice we have killed trout in the middle of the hottest day, when other amateurs had laid by their tackle in despair until rain had deepened and coloured the waters. In the morning and evening this plan is infallible; and we would recommend the most devoted fly-fisher or minnow spinner to try it, as he will really find that when trout, particularly large ones, will not rise to a fly, or even strike at the minnow, they will sometimes take a well scoured red worm, thus *naturally rolled* to them.

3490. *These methods of worm-fishing* may be successfully varied, sometimes by sinking and drawing the bait instead of allowing it to trip, in which case shorten the line somewhat, and sink the worm into any likely deep, drawing it slantingly across here and there; occasionally draw it gently up likewise, which will often stimulate the trout to seize it.

3491. *Dipping and roving with the worm* will prove now and then the best line to pursue, by which it may be shown in mill-races, flood-gates, and other such like situations, but more particularly in the runs between weed-beds, where the best trout often lie concealed. In pursuing these various methods it is necessary to add lead to the line sufficiently

to sink it: the quantity proper for that purpose must be judged by the nature of the water, observing that if weight enough be not employed, the bait will not reach the bottom, but float about by the force of the stream. The shot made use of, however, should be small, that they may be placed, if the stream be quick, as near as four inches; but if moderate, not nearer than eight or nine inches from the hook. Do not strike at the moment a fish is felt at the bait; for in thus taking it off the ground, it is common for the trout to elevate it two or three times before he gorges it. When a repetition of the pulls occurs, then strike smartly and proceed to play the fish, but be not in a hurry to land it if large, until it is exhausted.

3492. *Caddis, grubs, caterpillars*, and in fact all the various larvæ and pupæ described among insect baits, prove excellent lures for trout during the spring and early summer months; and as these advance to their last change, the perfect insects are as readily taken when used in natural fly-fishing, which part of the subject will need no further notice at present, as we shall dedicate a section to natural fly-fishing hereafter. Gentles are used for trout angling in summer, but they are best shown by means of a quill float, with the finest tackle, and a hook, No. 8, 9, or 10.: sink the bait to within two or three inches of the ground. We have occasionally used a caddis and two gentles with success, or two blood-worms and one gentle; and if we are not mistaken, this association of baits tends to deceive these wary fish more than a single one. Gentles are particularly calculated for trout-fishing in still waters communicating with rivers: we have so met with them in canals fed by rivers to which trout frequently resort, when they have had a temporary glut of minnows. We have found them particularly in the Grand Junction Canal, which is crossed and recrossed by the Gad and Bulbourn rivulets, the union of which forms a very excellent trout stream. A portion of it was rented by us, and we observed the fish made frequent migrations from it to the canal: towards the decline of an unfavourable day we could always meet with them there, and we could also commonly secure them by a worm or gentle, which it is more than probable they would have refused in the stream: we have witnessed the same in many other similar situations. Trout are likewise very often to be found in the brooks which communicate with rivers, up which they pass to look for caddis, water insects, and other delicacies. Any heavy bait is worse than useless in trout angling; but a few small pieces of worms, or a few unscoured gentles, according to the nature of the hook bait, if rolled in sand and cast in occasionally, attract their attention to the bait, and relieve them from any fear of entrapment.

3493. *Salmon roe* is a summer bait for trout, and at particular times is the most killing for trout of any known. The line, the float, and the hook used with it must be as fine as when fishing with gentles, and the roe should be sunk within one inch of the bottom: we further recommend, when it is used, that parboiled barley be thrown in both before and during the fishing, which, done in small quantities, will be found to detain the fish without glutting them. In regard to the true season for trout, we hope we have now satisfied the bottom angler that his trouting practice may be pursued throughout the whole summer: but it must be remembered that during the hot months and bright days, success is only certain early in the morning, and from the early part of the evening until late. In bright nights, some pursue it all night long; to which practice, although we do not advocate it, we shall again recur hereafter.

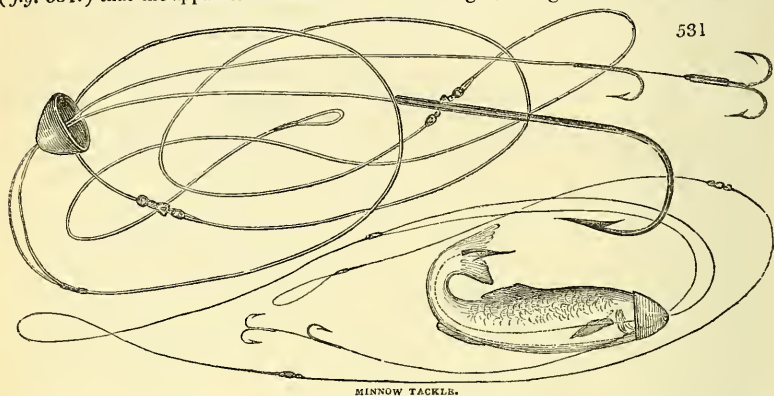
3494. *Living and dead fish baits* are among the most attractive that can be offered to trout. Live minnow-roying is sometimes practised with a shotted line, but does not, we think, usually prove very effective. A living minnow is also occasionally appended to a float line, and made use of in the gentle currents of trout rivers; but the float practice has little to recommend it beyond its placid character, and its freedom from trouble and labour in baiting. The different methods of using the living minnow, gudgeon, &c. are fully detailed in the section on live baits: loaches, bull-heads, and gudgeons, are now and then likewise employed as live baits for trout: but these are even less eligible than living minnows, except on night lines, in which way they very often take the largest trout, and for this purpose they are even preferable to minnows, as they are usually harder.

3495. *Dead fish baits* are employed much more effectually in trout fishing than living ones, and their superiority is as great as that of living fish over dead ones, when taken in the common course of feeding by trout. This probably arises from the circumstance, that the living *bait-fish* seldom shows itself but as an exhausted object, which subjects it to the suspicion of being diseased and unhealthy, objects which trout, however voracious, always avoid, probably from an instinctive dread of intestinal worms, which, thus taken, would immediately colonise themselves in the new subject: the dead fish bait, on the contrary, can be exhibited in full action, and with more than its natural energy, the rapidity of its motion completely concealing the snare which accompanies it.

3496. *Minnow spinning or trolling* is not only a very effective method of taking trout, but it is altogether a favourite pursuit, and after fly-fishing is certainly superior in its attractions to any other. Like every other popular amusement it is practised in different ways, and with different apparatus. In the section on live baits, we have already described some of the methods which are employed by anglers, and we shall here introduce some others more worthy of attention, commencing with that which may be supposed to have gained some celebrity, from its being lauded by Colonel Hawker. To attempt to describe it in any other language than that of the colonel himself, would be to rob the subject of half its force and interest. "Trolling or spinning a minnow," he says, "is a most general mode of trout fishing; or, I might almost say, trout *poaching*. It is, however, very rarely done in a proper

manner, though every man, as a matter of course, upholds his own system. I, like all the rest, did the same, till after fancying for years that I could challenge any one, was beat and laughed at by a *trout killing* divine. Now, however, I have not only got master of his plan, against which all others that I had ever seen, read of, or heard of, had no chance whatever; but I have remedied a few trifling defects that it had, and put Chevalier in possession of the improvement. The great advantage of it is, that it takes the trout when they run and *bite short* by means of fly-hooks that play round the other on a *separate branch of line*, so that I have often killed three or four brace of trout without the minnow being in the least injured or even touched by the fish. To describe the tackle *properly*, without giving a plate of it, would be difficult, if not impossible." It is to be had at all London tackle shops.

3497. *In unison with this suggestion on minnow-spinning* we present a figure of the tackle which the colonel recommends, and in consequence of his recommendation, backed by that of the author of *A Handbook of Angling*, it is at present very generally used. It will be seen (*fig. 531.*) that the apparatus consists of two links of gut, a longer and a shorter one. "A



minnow hook, No. 1. is whipped to the shortest link, and to the other a triangle of three No. 7. hooks tied back to back, which are to hang about three inches below the larger one: when the minnow is on it, a second triangle, whipped to the same gut, should hang even with the side of the bait. These links altogether form a harness which is to be attached to the line with a small box swivel between them. The perforated snout-lead is, however, first put on. Having selected a *white bellied minnow*, of *rather small size*, and hardening it in bran for an hour or two, first draw back the plummet, and put the large hook into the minnow's mouth and out through the right gill, taking care not to tear the mouth of any part of the bait; then draw the line three or four inches to you, so as to be able to get the hook back again into its mouth. Then take the minnow between the finger and thumb in the left hand, and the large hook in the right hand, and run the hook *all down its back, close to the bone*, to the very end of the fish, and let it come out about the *centre of the tail fin*. Then with your right hand pull the minnow out as straight as it will lie, and press it into natural form with the finger and thumb. Afterwards, *nip off the upper half of the tail fin*, in order to prevent a counteraction to the spinning of the minnow. Having done this, draw down your plummet again, and see that your branch line falls smoothly by the side of your bait line; and if not, rub it with Indian rubber till it does. Your hook is then ready for action; and action indeed, it may be called, if properly done. I should observe, that a new gut seldom spins the minnow so well as one that is half worn out (by reason of the stiffness which encircles the minnow's gill): therefore ten minutes' soaking in water, and sometimes a little hard friction of the gut, just above the large hook, may at first be required, besides the working it with India Rubber. So much for this plan: there *may* be many better; but all I can say is, that I have not yet *seen* one fit to be named with it." We now also well remember long ago to have heard mention of a killing method of minnow spinning with loose hooks, which very frequently entangled the trout when it was making its turn round after having refused the bait. What that exact method was, we do not now remember; for we were at that time attached to a plan of our own, detailed below; and we apprehend that we were not very slow to believe that the loose hooks would scare the otherwise wary trout. Such hold has prejudice on mankind, that until accident has brought them to light, half the advantages within our reach remain unknown to us: we insist (and with the greatest propriety) on the necessity of hiding even the finest knot in the whipping of a trout line by covering it with white wax, and occasionally of colouring the whole line; who therefore amongst us would have believed that the devil-bait, unlike any thing in sky, earth, or water, would have been so readily snapped at by a keen eyed

trout, capable of discovering the slightest false shade in the artificial fly, and apt to refuse the best dressed one, if offered half an hour beyond the natural time of the appearance of the original. To resume our subject, what the precise apparatus which had been hinted to us was, we are not aware: but the principle was the same as that brought forward so liberally by Col. H., and for which every angler is indebted to him; and though we have not ourselves adopted it wholly as will be seen, yet we have in part, and have been benefited by the addition. We likewise know several good minnow spinners, who will now use no other than this.

3498. *The methods of minnow spinning*, recommended by Mr. Salter, are those with the double and single hooks described with live baits. In using two hooks he directs that the first should be a long shanked No. 1. tied to nine inches of single or twisted gut, having another piece of gut three inches long, furnished likewise with a No. 9 or 10. hook whipped to it, so that the smaller hook may reach to about the shank of the larger: he now lengthens the long link of gut by another piece, first interposing between their ends a swivel, to which he adds also a third gut link; but this we should recommend to be doubled or twisted, although Mr. Salter makes no mention of that operation. Between the junctions of these last pieces, place another swivel; lastly, put a shot on the gut within half an inch of each swivel, and all will then be complete to receive a minnow or small bleak. It is singular that Mr. S. directs two shot (to weight his line as we suppose), though he says nothing about the size of them, which if necessary ought to be large: yet in the face of these directions, his figure, which in other respects is an excellent one, exhibits no shot, but on the contrary a nose-lead, that certainly answers the purpose of extending the minnow much better than the shot, which have a bad mechanical effect on the line carrying the spinning action of the angler's hand through a segmental line, instead of a straight one. We are of opinion, however, that a small pipe-lead introduced within the mouth, or a leaded hook, are either of them neater and likewise better than the nose-lead. When a large hook only is used in minnow spinning, Mr. S. insinuates it, first, under the chaps of the bait, bringing it out on the outside of the nose, then re-introducing it and passing it through to the tail as usual; or otherwise enter it at the chaps, and pass it out at the nose as before; then again introduce it by the mouth and out at the gills, after which finally pass it through the mouth to the tail, then draw the slack line at the mouth tight, and tie the tail and hook together with white silk.

3499. *Another plan has been adopted*. It certainly is not exactly like any of those usually employed, though there is no novelty whatever in the principle. Three ready-made double hooks, or otherwise three pairs of single hooks being tied together back to back, of size No. 8 or 9., are each to be whipped to a piece of fine round gut, one of the three pieces being of the length of four inches, and the two others of three inches each: this done, make a fine loop at the unhooked end of each of three pieces. Insert near the root of the tail of a white bellied minnow, by means of the baiting needle, the loop of the longest piece of gut, and allow its double hook to bury itself within the skin, and the barbs to apply to the spread of the tail: next, introduce, in the same manner, one of the remaining pieces of gut on the contrary side, at such part of the minnow as shall bring the loop of both pieces very near but not exactly together, that is, the loop of the shortest should project scarcely one-eighth of an inch beyond the other: lastly, allow the remaining double hook link to be included with the loops of the other two into one master-loop of the hooked swivel of the traces, or into one made in an additional strong piece of salmon gut, interposed between the traces and them; this last must hang loose by the side of the baited minnow. Before you attach the swivel traces, however, pass these loops through the bore of a nose-lead; or otherwise pursue the following method, which we ourselves preferred and usually practised,—pass it through a small tube-lead, to be then forced into the mouth and throat of the minnow. In fig. 531. such a lead will be seen just covering the fish's mouth.

3500. *In baiting*, by having allowed the loop of the longer piece, as already directed, to be a trifle short of the other, the consequence was, that when the whole was drawn tight up by action, this inequality rather gave the minnow a twist, particularly towards the tail, which greatly contributed to its spinning. We have varied this apparatus also in different ways: we have fitted it without loopings, and have instead whipped the gut ends, when the bait has been armed, to the single piece of long gut, over which whipping we passed a thin roll of sheet lead as a weight. Another method we pursued was, to loop the three, so that the loops hardly projected beyond the lips of the bait, which loops we included in a piece of gut and whipped it firmly: over this we carried the nose-lead, and the whole was then very neat and efficient. If any brother angler should be prompted to set up this apparatus in this latter manner, it will be prudent for him to pass the loose double hook through the opening of the gill (fig. 531.), which we in fact always did in whatever way we used it; and we would now recommend also that the angler, instead of one loose double hook-trace as employed by us, should apply two, allowing the second to hang two or three inches longer than the other, and to be attached to the master-loop through the contrary gill. We were led to make use of this apparatus by the frequent disappointments encountered when minnow spinning, of finding ourselves foiled by trout, which, after striking the bait, turned short round and let it go again, particularly when not eager to feed. The event of the trial confirmed us in the use of it; for as these fish usually strike the bait crossways, so it frequently happened that, when they would have wished again to abandon it, the central hooks have held them fast; and after our adoption of the loose hooks, when they only showed themselves to the bait without striking or seizing it, they still were often caught foul by those means, when on the turn to make their retreat.

3501. *A plan of baiting*, somewhat similar both to our own and to that which Colonel Hawker describes as practised by some anglers, consists in employing three double hooks, the first (which forms the foot of the line) is surmounted by a second whipped to the same gut about an inch above, and a third is also whipped an inch higher. In baiting, fix one of the barbs of the upper hook through the lips of the bait-fish, the next into the back, and the third a little above the tail; observing, in applying them, to draw the minnow so as to curve it a little.

3502. *Another method of baiting* had been adopted by us before that just described, as one

which, although simple in itself, was effective, and met the difficulties of giving gravity to the bait-minnow without encumbering the line with a weight visible to the trout; it also kept the bait straight on the bait-hook without distortion. The apparatus consists in a No. 1. hook, taper leaded at its upper part to lie within the minnow, so that its extremity may be exactly lodged within the mouth, the top of the shank just meeting the lips: thus, when the large hook has been introduced, the triangle of three hooks, No. 8 or 9., and attached to the hook line by a minute loop, may be brought close to the nose, and one of the hooks buried in the back of the head, all which is to be finished by inserting two stitches through the loops, one on each side of the line, with blue or grey silk cut off close. In this method of baiting, as it is of consequence that the hook of the triangle fix itself into the minnow exactly at the junction of the head with the body, by which the hold is rendered much more secure, and less likely to disfigure the fish, so the angler will find it prudent to shorten the shanks of the hooks considerably ere he unite them into the triangle. To obviate the inconvenience of the minnow slipping back on the large hook, and becoming crumpled and deformed, we have seen hooks with a sort of pointed process towards the end of the shank, which should allow of the ingress of the hook readily, but when the mouth was closed, some part of it being caught by this sharp rising process, prevented its retraction by the force of the water.

3503. *The devil-bait*, which, as a trout killer, is worthy of some farther observation here (see p. 1026.), will be known to the angler, although the non-angling reader (we almost tremble for our own reputation or the fate of our pages), on opening our tome, may be startled with so astounding a title. As a rose would smell as sweet by any other name, so the trout are known to take this kind of *Devil Minnow*, spite of its terrific appellation, so readily, that it has become an especial favourite with the luxurious fisher who dislikes trouble, or with him who cannot procure another; and it certainly does wonders, though we are constrained in candour to own, that from the time of its introduction some years elapsed before we could persuade ourselves that it would take fish, or that they could be so easily beguiled as to seize on such an anomalous figure; but having tried one and succeeded with it, we never afterwards moved on an angling expedition without one. What it is taken for, the fish only know; for we are certain the angler himself cannot divine. Mr. Salter talks of devils, or *artificial caterpillars*. The *Sphinx Atropos*, it is true, produces a monstrous caterpillar, sufficiently variegated, and with a name sufficiently portentous; but we cannot think that its resemblance to this or to any other caterpillar entitles it to be so called. The trout, however, without any casuistry, appears to take it on trust, little troubling itself about its typical qualities; and this amongst many other instances serves to show us how contradictory fish are in their habits, at one time foiling us and all our artifices, and at another falling by a snare fitted only to deceive the blind, and yet not such a one as Dr. Moyes, who could tell the colour of a coat by the feel, or the number of persons in a room by snuffing up the number of their atmospheres, or by the identities of presence impinged on some one of those senses which served for that of sight!

3504. *The devil-bait* (as seen at p. 1026.) is made of leather or silk, and is striped of various colours, worked over with gold and silver wire, so as to be as gaudy as possible: the tail is of horn, silver, or block-tin (we have seen it of tortoise-shell also), to which is usually appended a double hook or a triangle of hooks; and on the other side, but nearer the head (if it can be said to have one), is often another triangle or double hook, with a single one added in the place of the ventral and dorsal fins. The whole thus formed presents something of a fish-like character, but without a defined head. These baits are to be procured at the tackle-shops; and from the complexity of their structure, it would be vain to enter on any instructions how to make them.

3505. *To use this bait*, apply swivel-traces, and append it to the reel line with a minnow spinning rod, with which it may be cast to great distances and from great heights, as the tops of bridges, &c. In the deep water of lochs, meers, &c. its brilliancy attracts attention, where less conspicuous objects might fail. In still pools, or in rapids, it appears equally an irresistible lure; and often a single dip or cast of it is sufficient to have it struck at, if a trout at all on the feed be present.

3506. *The minnow* is sometimes also used on a gorge-hook in trout anglings, as particularised among the *live baits* (p. 1017.); and the new bait, called the minnow-fly, which is drawn on the top of the water, is likewise employed for a similar purpose: some account of it appears among *dead baits* (p. 1027.).

3507. *The minnow spinning rod* has been already hinted at as one which requires length and strength combined with lightness, which requisites appear best obtained by having it made of cane, except the last joint: it must be neither too flexible nor too stubborn, either extreme will impair its utility; if too stiff, the hook or the hold will be endangered when striking; if too pliant, it will yield to the resistance of the water too much to allow a ready stroke to be made when a bite occurs, and the fish will escape ere the effect of it reaches him. The first delivery of the minnow on the water should be delicately done, so as to raise no disturbance in it either by noise or splash, which is managed by checking the im-

pulsive swing just before it reaches its destination, at the same time dropping the hand as well as the point of the rod, which will thus check the bait, and lay it lightly on the water. This effected, begin to draw the bait slantingly across the stream, at various depths, with a certain degree of regularity, observing also to imitate the shootings of the living fish in its actions: and as Colonel Hawker, in the true spirit of a piscatory tactician, observes, "if a fish comes after your minnow never stop it, or in any way alter your pace, or he will most likely be off again directly." More fish are lost by the nervous feeling which shoots through the young angler when he perceives the first rush of a trout, and flinches from or starts at it, than by any other course whatever. If nothing of this kind takes place, the trout sees no cause of alarm, and there need be no fear on the angler's part, but that he will himself strike the fish at the regular pace at which he attempted to overtake it; and that being done it only remains for the fisher to fix the hook or hooks within its mouth by a smart stroke from the wrist, if possible in a direction contrary to the progress of the fish.

3508. *The minnow spinning practice* on the wide expanse over which the best rivers of the distant counties extend, is by no means the same as that which appears in the theory, and in the written instructions of some of our best angling treatises, as the general one, and that which is applicable to all situations and all waters. The fact is, that the usual details of fish and fishings are, with a few exceptions, calculated for the London meridian only, the writers seeming totally to forget every water but the Thames, the Lea, &c.; or if by chance they extend themselves somewhat, banks and hedges accompany them; and while reading their didactic accounts and the piscatory rules, the tyro would suppose he could always pursue his various practices in ease and safety, warm and dry, from a level embankment, or the verge of a smooth pebbled shore. But if it had fallen to our lot to initiate him in the Dove and Derwent, or the Aire, the Wharfe, or Swale, or the Wye, these downy pillows must have vanished. Had he journeyed with us still further north to the Eden, the Tyne, and the Coquet; or had we met with him in Wales, and he had taken his first lessons in the Usk, or the "ever winding" Towey; or entered his novitiate in the Torridge, the Tamar, and Exe of the west, he must have abandoned the shores, and have waded in different depths, as we have done in these and many other of the British waters, or he would have taken no fish. In these distant rivers such irregularity prevails with regard to wind, weather and water, as is seldom more than hinted at in our books: the happy moment must here be at once seized, and the ready and enterprising angler will alone prove fully successful. In a rocky and wide, but shallow expanse of the Usk, we once met with admirable sport which will illustrate this remark. The water was just tinged by a slight flood, the whole effect of one night's rain; fortunately we had furnished ourselves with some minnows, of which, for similar occasions, no prudent fisher should be without a store. With these we plunged mid-deep into a part of the river we were not unacquainted with, and pursued our sport about two hours and a half, when (for we profess to be averse to fish-murder), from the number we took, we were induced to leave off earlier than we should otherwise have done, but we still returned with such a basket as ought to have satisfied even a piscatory glutton. The next day we visited the same spot, and in eighteen hours only the water had lost several feet of its depth, and become as clear as crystal; the trout so greedy yesterday would this day neither take the minnow nor rise to the fly, for the water was unfavourable, and they were already glutted.

3509. *In these wadings*, however, it is absolutely necessary for the angler who visits for the first time the rivers of these countries, to be furnished with an able guide, and still more particularly if the water be coloured, at which time minnow spinning is most productive of sport, and therefore most proper to be followed. Without a local knowledge of his own, or the assistance of such a guide, the angler may in the midst of his pursuit be plunged in a moment into an abyss too deep to rise from; such are the sudden and abrupt depths of these streams, which run through rocky and mountainous districts. When wading for the purpose of minnow trolling, it is necessary to shorten the line somewhat, so as to have a full under-hand command of the bait, and to keep the point of the rod near the surface of the water. We also advise the angler that, to avoid abruptly disturbing the fish in such open situations, he should first steal gently through the water to a spot and then fish around him, moving a step only at a time, observing, for his own security, to take each step with a stout spiked landing-staff grasped as a support: make short springing movements, not violent jerks, with the wrist, the space seldom allowing of a series of determinate throws of the fly at one unvarying rate, or an uninterrupted line of action, as is practised in other waters. The stroke in these cases must be quick, for so the trout takes the bait, for the most part; and when struck he must immediately have his head upraised if possible, or he will shoot off to some deep or shelving hollow. If his size will not suffer him to be wholly restrained, give him liberty, still acting with a restraining hand sufficient to tire him by his opposition, and then he will drown himself, as it is termed, for here no weeds or piles can entangle, though rocky stones may conceal him and cut the tackle. Do every thing, however, to avoid these dangers, except following the fish, and under no circumstance do this unless you know every inch of ground.

3510. *Floods* take place very rapidly in rivers of the kind just alluded to; the mountain torrents appear, in many instances, with inconceivable rapidity. We were informed at Llandilo, that a sudden fall of rain in the course of the river beyond the Brecon Hills has produced a swell above so quickly that it has been heard before it appeared, and then arrived so suddenly as hardly to give the angler time to cross the stream. We by no means vouch for the fact to the extent here noted; but we have ourselves seen that stream, as well as the Eden and the Tyne, both low and fine at night when we left them, but by the following morning turbid, and many feet deeper than before, roaring and foaming in their passage too impetuously for any angling whatever. The tourist can never therefore calculate on a day's fishing in these countries with certainty: but, on the other hand, sport is very seldom long delayed; yet, to embrace it, he must be prepared not only to seize the opportunity the moment it offers, but also to practise that particular method by which alone success can be achieved; and therefore, if unable to vary his practice, he must often draw a blank. He may succeed with minnow when the water is too foul to fish with worm; the fly will kill when the minnow is failing from the clearing of the water; and after it has become too bright and too low for either of these to do execution, then the expert worm fisher (but the very expert one only) may yet draw trout from their retreats, as qualmish children are tempted to take medicine from one hand, by the dainty sugar-plum held in the other. These particulars are the more earnestly pressed on the notice of the angler, because in many of these rivers running over limestone tracks, no coarse fish occur to fill up an hiatus; no pike can be looked for in a cold blustering day, no chub dipped for in a basking hot one; trout alone in some of them, trout and grayling in others; and in a third, perhaps, an occasional salmon appears like a meteor to illumine the gloomy vacuity. These, and these only must be looked for, and cannot therefore be looked for with too many eyes, too many hands, or tried for by too many methods, so they be fair ones.

3511. *Night angling for trout* is often practised, but as it appears to have been better understood by Barker than by ourselves, we will offer his experience of it instead of our own, which is but small. It seems that this artist was directed by his patron to procure a dish of trout against the following morning, and he describes his progress in the execution of his intentions as follows:—“It proved very dark; I threw out a line of three silks and three hairs twisted for the upper, and two hairs and two silks for the lower part, with a good large hook. I baited my hook with two lob-worms, the four ends hanging as meet as I could guess them. I fell to angle; it proved very dark, so that I had good sport, angling with the lob-worms as with flies on the top: you shall hear the fish rise on the top of the water, then you must loose a slack line down to the bottom as nigh as you can guess; then hold your line straight, feeling the fish bite; give time: there is no doubt of having the fish, for there is not one among twenty but doth gorge the bait; the least stroke fastens the hook, and makes the fish sure; letting the fish take a turn or two, you may take him up with your hands. The night began to alter, and grow somewhat lighter; I took off the lob-worms and set to my rod a white palmer-fly made of a large hook. I had good sport for the time until it grew lighter, so I took off the white palmer, and set to a red palmer made of a large hook. I had good sport until it grew very light, then I took off the red palmer and set to a black palmer. I had good sport, made up the dish of fish, so I put up my tackles, and was with my lord at his time appointed for the service. These *three flies*, with the help of the lob-worms, serve to angle all the year for the night, observing the times as I have showed you in this *night's work*; the white fly for darkness, the red fly in *medio*, and the black fly for lightness. This is the true experience for angling in the night, which is the surest angling of all, and killeth the greatest *trouts*. Your lines may be strong, but must not be *longer* than your rod.”

3512. *The edible qualities of the trout*, now so much esteemed among us, were apparently but lightly esteemed by the ancients. Ansonius appears to be the only author among them who even mentions the fish: and he notices it only on account of its beauty, being altogether silent on its merits as a food,

“Purpureisque salar stellatus tergora guttis.”

“With crimson spots the salar's back is starr'd.”

It is, however, not a little singular, that so delicate a species of fish should be neglected at a time when the folly of the table was at its height, and as Mr. Pennant observes, that the epicures should overlook a fish that is found in such numbers in the lakes of their neighbourhood, when they ransacked the universe for dainties. The milts of the *Muræna* were brought from one place, the livers of *Scari* from another, and oysters even from so remote a spot as our Sandwich; but there always was, and always will be, a fashion in the article of good living. The Romans seem to have despised the trout, the piper, and the doree; and we believe Mr. Quin himself would have resigned the rich paps of a pregnant sow, the heels of camels, and the tongues of *flamingoes*, though dressed by Heliogabalus's cooks, for a good jowl of salmon with lobster sauce. It is scarcity which gives an artificial value to the matters we feed on, as well as to many other of our enjoyments; and these caprices are the natural results of riches and luxury, cloaked often under the name of refinement. The

difficulty of procuring any variety of fish with us, as with the Germans, begets a fancied preference for it : thus whitebait, so highly prized because not common, may be well imitated by minnows ; and in the opinion of many, they may be even beaten by small smelts. In countries where herrings are scarce, they form a dish at the table of *nobility*, and here they sell for a halfpenny each to the *mobility*. Still, as regards them however, the savoury morsel will make its way in spite of cheapness and vulgarity ; and we find the herring creep, but unowned, to the tables of the great. Nay, if we are rightly informed, royalty itself has not disdained to regale itself on *sprats* ; and this richly tasted diminutive type of the herring has been more justly prized ever since. The capricious epicures of the days of Horace valued their mullet in proportion to its size ; not because it was thought to be better than the smaller fish of the same kind, but simply because very large mullet were extremely difficult to procure. The price given for one which Juvenal notices is a striking instance of this folly, as well as of the extravagance of that age in general.

“ The lavish slave
Six thousand pieces for a mullet gave,
A sesterse for each pound.”

Dryden.

To mark the deteriorating effect of plenty : — “ In July 1804, an immense number of this delicious fish was caught at the mouth of the river Ex, when the draught was so great that they were sold for sixpence per dozen ; and, what is remarkable, for several years not a fish of this species had been seen on the coast.”

3513. *Early habits and local associations* have also much influence in fixing our tastes : it is not therefore to be wondered at, that when George the First came to the English throne, his long residence in Hanover had given him some peculiarities of this kind. Among other early gastronomic attachments, his majesty was very fond of oysters, and had patronised the consumption of them very freely, by his own example, when in Hanover. The distance from their native beds, however, prevented them from being so fresh as with us (the method of keeping them alive in salt and water being then unknown) : but their *haut gout* had become familiar to the Hanoverians, and was even identified with them as a part of their excellence. On his majesty's arrival in England, of course his favourite luxury was not forgotten, and *native oysters* graced his board, selected, as might be expected, from the choicest and latest arrivals. Day after day did the good king swallow this grateful *bivalve* ; but day after day did he complain that English oysters were by no means so good as those he used to eat in Hanover. They were changed and rechanged, but to no better purpose : at length some one suggested the truth, and such a dish was placed before him as would have set the company at Wright's in an uproar ; when his majesty, on the contrary, recognising the old flavour, both by taste and smell, affirmed that they were the *véritable*, and stale oysters were in future procured for the English monarch.

3514. *The culinary treatment of the trout*, and of the salmon also (for both are conducted on the same principles), is necessarily an important subject, seeing they have become prominent among our greatest delicacies. Important, however, as the trout ranked before, the recipes of Halieus and Colonel Hawker have now given it additional weight, and when such characters as these gird on the cook's toga, Dr. Kitchener may well tremble. Happily for ourselves these great authorities agree so perfectly in the principles of the process throughout, and their sentiments are so strictly in unison with our own on the subject, that we have only the part of an annotator to perform, and shall more easily spin our yarn by a commentary on their text, than by any thing of our own. Had we, like the far-famed critic in the *Quarterly*, to boast of having partaken, *fronde super viridi* of a salmon dressed after the recipe of Halieus, near the ruins of Tillmouth Chapel, or of having *discussed a trout* in the well-appointed sporting *salle à manger* of the gallant colonel, we might have been more fitted to detail the minutiae of the excellence of each plan. We will, however, attempt the rationale of them, which will be perhaps more to the purpose.

3515. *To give directions for the dressing a trout, secundum artem*, the matter should be taken up from the moment the fish is drawn from the water ; and here we may first remark, that to such a degree of refinement has our taste arrived, that some of our disciples after Epicurus affirm, that their gustatory organs are sufficiently acute to distinguish such fish as have softened their flesh, and expended their juices, by a protracted struggling on the hook, from such as have been taken leaping alive from the net : and need we doubt it, when Juvenal informs us, that the nicely discriminating *gusto* of the oyster epicure in his day was such, that he could at once discover by the taste, whether they came from the Circæan rocks, the Bay of Lucrum in Campania, or from Richborough (*Rutupæ*) in Kent, in England. These most sensitive tasters should at least have their fish dressed by Parisian cooks, who, it is said, regularly take medicine to preserve an exquisite sensibility of taste in the composition of their sauces. Be not dismayed however, brother anglers, for with the help of the piscatory worthies we have brought before you, we will yet cook your trout, so that henceforth no one shall put you out of conceit with angled fish, although they had been played as long even as a gentleman is said to have played a salmon in the Shannon, from the morning even until the evening.

3516. *The moment a trout is landed it should be immediately killed*, either by a sharp blow

on the head, or otherwise by forcing it backward until the vertebræ or neck bones are heard to crack : on such a minutia it would seem that no more was wanting ; but, being old in the practice, we will hint to the tyro that there are advantages and disadvantages attending each of these methods. Unless the blow at the back of the head be sufficient to crush in the brain, the mere jar will leave such a portion of *nervous* life, as will injure the muscular contraction : but as this is the neater mode of destroying the fish, and will preserve it for a present in better appearance, it will find advocates, and it is therefore well to hint that it may be conveniently done by a smart stroke across the sharp edge of the sole of the strong fishing shoes or boots of the angler. When the head is forced back, it ruptures the junction of the gill-flap with the throat, and certainly injures the appearance of the fish, but it destroys the nervous vitality so perfectly and so instantaneously, that the muscles are felt to become rigid in the hand, and no such quivering remains, as often follows the other method. It also bleeds the animal more effectually, which brings us to the next requisite process, which is that of making a few sections, or cuts, across the gills ; and this, if the fish be large, should never be omitted, as by abstracting the blood from the body, it may be kept sweet much longer. This done, proceed to crimp the fish by making deep transverse sections through the skin and flesh down to the bone on each side, at about two inches distance from each other. Colonel Hawker seems to dissent from strictly vertical sections, and directs that the "blade of the knife be carried in a sloping direction, so as to make every incision rather circular and parallel, as we suppose he means, with the flexure of the gills, instead of having the blade of the knife perpendicular, by which you would cut too much across the flakes, and the fish would not be near so firm." As, however, the flakes the colonel speaks of are the fascicular masses of the great lateral muscles, which act in concert from the head to the tail, so therefore the cutting directly *across their fibres* must increase the muscular retractility, requisite to produce the crimping effect ; and if any real benefit be derived from making the sections segmentally in the line of the flexure of the gills, it must arise from the very division of the fibres composing these masses, directly contrary to the line of their action, by which a still greater corrugation may take place than would occur were it made in the true course of the fleshy lines. Crimping is not usually performed on small trout : but all sizes, without exception, should be destroyed the moment they are taken out of the water, unless preserved in a well-boat, drum-net, or kettle. When we mention all sizes, we wish it to be understood that it should be done wherever it is determined to kill all that are taken, but at the same time we would wish the angler to bear in mind, that it is much more sportsmanlike to return to the water all trout under a pound weight, certainly those under half-a-pound should always be so returned. By at once destroying life in the fish to be used, humanity is studied ; and it tends to keep them better, and to make them firmer when dressed. The fish being crimped and bled, nothing remains but to keep it as cool as possible until it is cooked, for which purpose Colonel Hawker directs, if a pump be at hand, to allow a full stream of water to fall on it for ten minutes, or otherwise to lay it in cold spring water. We need hardly caution the angler not to substitute river or pond water which is less cool : but if spring water were not at hand, he might then make use of any other water after a method common in India, of putting around their wine a well wetted cloth, which being hung up in the sun and wind, an immense degree of cold is generated by the quick evaporation which the heat and air excite. When the fish have arrived at home, lay them on cold stones until wanted. "A trout," the colonel judiciously observes, "if possible, should always be dressed the day it is caught ; and never put to soak and soften over the fire, in cold water, as is the general custom. Remember, also, that if trout are suffered to remain in water after being sufficiently boiled, they will directly become soft, and lose all the firmness which is given by this mode of dressing them."

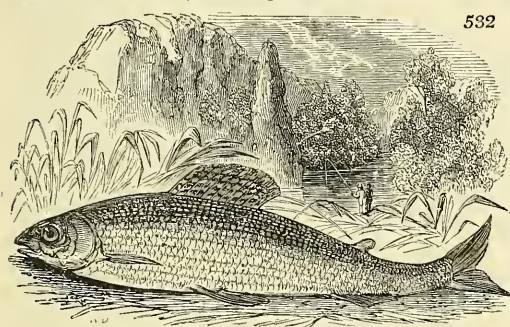
3517. *Cold and crimping* are the grand agents in preserving both the firmness and flavour of all fish which come to us at once out of the water. In the anatomy and physiology of fishes (p. 937.), it will be observed that we have described the interstitial matter between the muscular fibres and masses (the quantity of which when fish are in condition is large), as being composed of gelatine, albumen, and animal oil, which in union form a semi-oleaginous substance called the curd, but which unfortunately soon becomes tainted. Cold, by its coagulating properties, it is evident, must tend to retard the decomposition of this curdy matter between the fleshy fibres ; and it thereby gains an excellence of taste unknown in a fish long kept, or even kept at all without care. Crimping is greatly efficacious also in preventing early decomposition ; and it is to that we are indebted for what we term the *firmness* of fish, in opposition to what is understood by woolliness, a quality we have so often to complain of in unseasonable cod and other fish. It is therefore to these united causes that the firmness, almost amounting to crispness, of our salmon and trout, when judiciously crimped and cooled, must be attributed.

3518. *Proceed we to the process of boiling.* By the above digression, we have given full time for the assistants to have got every thing in readiness ; and we hear the colonel inquiring for the trout, desiring that if the dinner be nearly ready it may be cleaned, leaving

however the scales on, and having it pumped on for a few minutes more. Then have a kettle of water, with a large handful of salt, and when the water properly boils (*but not before*) put the fish in; and an average sized trout (say one of a pound weight) will be done in about ten minutes, and should then be sent immediately to table. This process is truly *secundum artem*, the salt being an important ingredient; for, as Sir Humphry Davy observes, *salt boiling water*, being of a higher temperature than that of common boiling water, the curd becomes more perfectly hardened by the increase of the heat. The inquisitive reader we would refer to the culinary treatment of salmon, where he will find a recommendation to eat fresh trout with a little vinegar and mustard only.

SECT. XVII. *The Grayling* (*Salmo thymallus* Linn.).

3519. *Gray salmon*, with longitudinal dusky blue lines, and violet coloured dorsal fin, barred with brown; length from ten to eighteen inches; head obtuse, the upper jaw longest; D. 18.; P. 12.; V. 11.; C. 19. (*Fleming*.) It has thus been described:—"It haunts rapid and clear streams, and particularly such as flow through mountainous countries: it is found in those of Derbyshire, Shropshire, Yorkshire, &c.: in Lapland, where it is very common, the inhabitants use its entrails, instead of rennet, to make the cheese which they get from the milk of the reindeer. It is a fish of very elegant form (*fig. 532.*); the body less deep than that of the trout; the head small, with protuberant



532 eyes, whose irides are silvery, speckled with yellow; the mouth is of a middle size, and the upper jaw the largest; the teeth are very minute, seated in the jaws and roof of the mouth, and they feel like a fine file; the head is dusky; the covers of the gills are of a glossy green, yet, when in prime perfection, these parts are blackish (differing in this respect from all other fish, being least beautiful when most in season); the back is of a dusky green, inclining to blue; the sides of a fine silvery gray (from which it derives the name), yet

when first taken they seem to glitter with spangles of gold, and are marked with black spots irregularly placed; the side line is nearly straight; the scales are large, and the lower edges dusky, forming straight rows from the head to the tail, which is much forked; the large dorsal fin is spotted, the other fins are plain: it is rather hog-backed, and, from the nose and belly touching the ground together, it is conjectured that this fish feeds mostly at the bottom. In length, the grayling seldom exceeds sixteen inches." Mr. Pennant mentions one taken near Ludlow, above half a yard long, and weighing four pounds six ounces, as a rare instance. One was caught near Shrewsbury that weighed full five pounds. The above rather inelegant description is still a very faithful one. *Thymallus* is a name bestowed upon the grayling on account of an imaginary scent proceeding from it similar to that of thyme. The name of *umbra*, which this fish also bears, has a far better derivation, for it is so swift a swimmer as to disappear like the passing shadow. Grayling are in great esteem, and their flesh is white and palatable all the year: they are in season from September to March (some say they are best in October, others in December), and they cannot be dressed too soon after they are caught. They lurk close all the winter, and begin to be very active in spring, and to spawn in April, or early in May; during which time, and in summer, near the sides, and at the tails of sharp streams, they take most of the flies trout are fond of: they rise bolder than the trout, and if missed several times, will rise again; yet, although they are so sportive after the fly, they are not courageous when hooked; and the sides of the mouth are so very tender, that unless gently played, when struck, the hold will frequently be broken. In September they retire in shoals to deep places.

3520. *The account of the grayling*, given by the venerable Walton, contains much truth and much fable; but the whole is dressed in so admirable a garb of simplicity, that we cannot refrain from offering it as one of the many didactic specimens of this our excellent writer of by-gone days:—"The umber and grayling are thought by some to differ, as the herring and pilcher do. But though they may do so in other nations, I think those in England differ nothing but in their names. Aldrovandus says, they be of a trout kind: and Gesner says, that in his country, which is Switzerland, the grayling is accounted the choicest of all fish; and in Italy, he is in the month of May so highly valued, that he is sold then at a much higher rate than any other fish. The French also value the umber or grayling so highly, that they say he feeds on gold, and that many have been caught out of their famous river of Loire, out of whose bellies grains of gold have been often taken. And some think that he feeds on water-thyme, and smells of it at his first taking out of water; and they may think so with as good reason as we do, that our smelts smell like violets at their being first caught, which I think is a truth. Aldrovandus says, the salmon, the grayling, and trout, and all fish that live in clear and sharp streams, are made by their mother Nature of such exact shape and pleasant colours, purposely to invite us to a joy and contentedness in feasting with her. Whether this is a truth or not, is not my purpose to dispute;

but 'tis certain, all that write of the umber declare him to be very mediceinable. And Gesner says, that the fat of an umber or grayling being set, with a little honey, a day or two in the sun in a little glass, is very excellent against redness, or swarthing, or any thing that breeds in the eyes. Salvian takes him to be called umber from his swift swimming or gliding out of sight, more like a shadow or a ghost than a fish. Much more might be said both of its smell and taste, but I shall only tell you that St. Ambrose, the glorious Bishop of Milan, who lived when the church kept fasting days, calls him the flower-fish, or flower of fishes." Such are the fanciful opinions held of the grayling. As to critical distinctive marks in the grayling, authors differ; thus, while Captain Williamson reckons sixteen rays to the pectoral, Sir H. Davy, if we mistake not, reckons ten only. Internally, the conformation of the grayling is very much the same as that of the trout; the stomach, which is muscular and strong, appears of a class between that of the common and the gillaroo trout, being admirably adapted to the nature of its food, which consists principally of the lesser *Crustacea* and such larvæ inhabiting hard outer cases, as require a powerful organisation to overcome the resistance offered. The remaining viscera bear the characteristics of the trout. When a grayling's dimensions and its weight are compared, and when the same is done by the trout, it will be found on a comparison that they are more nearly equal than would on a hasty inspection be supposed, the superior thickness of the former being compensated in the more regular distribution of bulk from the head to the tail in the trout, whereas the grayling tapers sharply towards the tail, where it is much smaller than the trout.

3521. *The spawning season of the grayling* is said by Sir Humphry Davy to be about the beginning of April, but most other authors affirm it to be May. As far as our experience goes, we consider that towards the latter end of April the greatest average number of graylings will have spawned; but we have taken them in different rivers both earlier and later in full roe. We think that in the Tyne and the Hampshire rivers they spawn earlier than in some other waters: we certainly, on the 12th of May, caught more than one in the upper part of the Trent with a full roe. Though the grayling is less affected by spawning than others of the genus *Salmo*, still it takes longer time to regain its perfect condition, and is seldom to be so considered before November or December. In the Dee we have been told, that they regain it more quickly than in most rivers, and much certainly depends on the nature of the water in this respect. Sir Humphry Davy, to whom the angler is indebted for some amusing observations on the grayling, says, erroneously, that the young which are hatched in May or June become in September or October of the same year nine or ten inches long, and that they weigh from five ounces to half a pound, and next year they arrive at from twelve to fifteen inches in length. But in reality they require double the time to attain that size.

3522. *Grayling are esteemed by some naturalists to be fish of passage*, visiting the sea on the first appearance of frost. Dr. Fleming favours this mistaken opinion, and Captain Williamson also. He says, "From this fish disappearing when the frosts set in, that is, the generality of them, I am disposed to believe that they visit the sea during the coldest months; at least that they go to the mouths of rivers, and recruit by means of the brackish waters. Of this I am the more convinced, because with the exception of the Humber and Trent, which run into the German Ocean, I believe all the rivers containing graylings lie in the west of England, and in Wales: besides, they are never found but where salmon abound." The grayling is found as far north as Lapland, at least it is so stated by Linnæus, but this is questioned by Sir Humphry Davy, who is of opinion that, like Bach's grayling found by Captain Franklin in North America, and distinguished by a much larger back fin, this also is a different species. This philosophic angler informs us, that he has travelled through most of the Alpine valleys in the south and east of Europe, and through some in Norway and Sweden, frequently with his fishing-rod in his hand; but that wherever he went he met with the grayling on no occasion in streams running from glaciers, at least near their source, but only in situations at the foot of mountains, where the temperature approximated to that of the atmosphere, which he thinks indispensable to the existence of this fish: in proof of it, he informs us that on putting some grayling and trout of the Teme into a confined water near its rising from a spring, the grayling all died, but the trout lived. That grayling are much influenced by extremes of temperature is evinced by many facts: if they do not retire further, they certainly on the approach of winter seek the deeper parts of rivers to avoid the cold: and if they actually do seek the salt water of the sea, or the brackish waters of the estuaries, as stated by naturalists, it is without doubt that they may shelter themselves under the increase of heat which is there found. Sir Humphry Davy with truth asserts, that even a slight brackishness in the water into which they are put is sufficient to destroy them. Great heat, however, appears equally inimical to them; and we may consider that the true *Salmo thymallus* is not found but in temperate climates; and even our own summers, when more than usually hot, have been known to destroy them, as was observed to be the case with many in 1825, particularly in the Avon, the Dove, and the Trent.

3523. *Grayling also require other peculiarities of location* besides those of temperature, such as a general character of the water they inhabit, and certain circumstances in the nature of its composition derived from its sources, or from the ground over which it flows. With one or two exceptions, they are only found in rivers which belong to the southern and western parts of our island. It is probably owing to the abstraction of some of these requisites, that the multiplication of these fish in several rivers where they have been attempted to be naturalised has not been attended with success: in some they soon disappeared; in others they remained, but never thrived; while in some waters, although they lived and at first increased, yet they were afterwards observed to shift their quarters to different parts of the same river, in most of which cases it proved, as in that which occurred in the Test, that they

migrated from above downwards, probably in search of deep and tranquil waters; for the angler cannot fail to observe that grayling do not, like trout, affect very rapid shallows and the boldest torrents; on the contrary, they seem to thrive best where milder currents alternate with deep and extensive pools; neither do they do well where strong gravel or pure rock characterise the bottoms; for it appears necessary to them that the ground over which they swim should be compounded of sand, gravel, and loam; which mixture is, as we know, very favourable to the production of the insect food on which they principally subsist. These views will readily help us to account for their being so common in some rivers and so rare in others, and may perhaps also teach us why they have not been found in either Scotland or Ireland. They were transplanted some years ago from the Avon to the Test, in Hampshire, being first introduced at Longstock, in the neighbourhood of Stockbridge; where, for a while, they were plentiful, multiplied fast, and arrived at a great size; yet, in spite of these circumstances, the situation did not seem exactly to suit them, for, after a few seasons, they were lost to that part of the river, and gradually descended lower and lower, and are now only to be found below Houghton.

3524. *The rivers in which we have found grayling* are, the Avon, Test, Dove, Derwent, Lug, Wye, Severn, Teme, Trent, Irton, Hodder, the Dee, the Bath Wharf, Humber, and some of their tributary streams. In Ireland and Scotland they are not, to our knowledge, met with. This partial distribution, seeing that they are abundant in many continental districts, has led to a supposition that the grayling was an exotic, and brought into England (when it was Catholic) to vary the fasts and abstinence-days of those times; and the circumstance that some of its most notorious resorts are where religious establishments of note are known to have been founded, seems to strengthen the opinion. This has been observed on by Poietes in *Salmonia*, who in proof of this instances the Avon near Salisbury, the Ure near Fountain's Abbey, the Wye near Tintern, &c. &c. This opinion is, however, rebutted by Haliens, who brings forward the Stour near Canterbury, where the grayling is not found; and remarks, likewise, that if the grayling be an imported fish, and its importation was intended for religious purposes, it is strange that we do not find it diffused through all the rivers of the south-west coast of England, where monastic establishments were numerous. We believe the grayling never migrates to the sea.

SUBJECT. 1. *Bottom Fishing for Grayling.*

3525. *Angling for grayling* forms a favourite sport with the inhabitants of the vicinities where this fish is found. The London angler, unless he travels, is unfortunately denied its enjoyment, Hampshire being the nearest county where it is to be met with, and the waters it there sports in being in general strictly preserved, the matter is but little mended; leave to fish is however to be obtained by a favourable introduction. The food of the grayling is principally insects, and insect baits are therefore usually employed in its capture. The winged ones are presented upon the water either in a natural or artificial state, and these we shall treat of hereafter. The larvæ or grubs of these are taken under the water; and it is they which form the usual baits of the bottom angler for these fish. Although the grayling is principally insectivorous, yet it has been known to take a live minnow and other small fish, but the occurrence is rare: however, that it is not wholly insectivorous is proved by its voracity in seeking for the spawn of the trout and other fish.

3526. *The season for grayling fishing* is mentioned by most writers as though it were confined to the months of September, October, and November; but these accounts are somewhat erroneous. We have often taken these fish at every period of the year, except between the last fortnight of December and the early part of March. We mean not to deny, speaking generally of trout and grayling as objects of the angler's sport, that the former is to be considered as a spring and summer fish, and the latter as being most to be depended on for autumn and winter amusement: but we mean to say, that, with the exception of about ten weeks, grayling take a bait all the year round; and we would observe, likewise, that this fish is so much less affected in its condition by spawning, than most others, that it is seldom too much out of season not to be worth the angler's attention.

3527. *In the early periods of spring* they may be brought out of their holds by offering them red worms on very fine tackle, with or without a float. We ourselves in most cases prefer fishing without one, if the water be clear; but if it be tinged, by all means use a float. Our practice has been, when without a float, to fish in such depths as are found in some parts of the Dove, Wye, and Trent, with our bait at one-third from the bottom; but when in moderately deep water, within a foot from the ground. The whole tackle, as the line, shooting, and hook, can hardly be too fine in grayling fishing generally; but when the depth is not great and the water bright, use a hook from No. 7. to 9., according to the usual size of the fish. One well scoured worm is better than two, unless bloodworms are the bait, in which case make use of a No. 8 or 9. hook, with three of the worms neatly put on it at once. The caddis is one of their favourite articles of food; and earlier than July, it is seldom that we have taken one without finding the cadew-worm, case and all, within its stomach. The caddis altogether forms one of the most excellent baits, and, as a matter of experiment,

we have tried and hooked several with the worm in its case, instead of naked. Other larvæ and pupæ, as caterpillars, the cabbage grub, earth bobs of all sorts, wasp and bee grubs, &c. &c. may be likewise used successfully: we have occasionally hooked them with the *Pulidinae*, or water snails; and in fact with most aquatic *Crustaceæ*.

3528. *Gentles form a very general bait for grayling*, and are used from the spring until winter, but principally so towards the autumn, when the grayling begins to leave sporting on the surface, and takes a bait better at mid-water than above: we have found gentles a favourite autumn bait in most of the grayling rivers that we have visited: towards the close of the summer, they are in some rivers used with great success, by putting on one at a time at the point of the hook, on which any of the grayling flies, particularly the duns, ants, and house-flies are dressed. Employed in this way, grayling will take the gentle either in the water, or a few inches, and sometimes even a foot or more, beneath the surface. In the use of gentles as a bait, it is good practice to occasionally throw in a few loose ones around you, but unmixed with sand or gravel if the water be still; if it be on the move, then throw them above the stream. Ant-eggs and wasp-grubs are good in their turn.

3529. *Salmon's roe is a killing bait for grayling*, and may be used throughout the summer and towards the autumn with great success in the manner directed under that head (p. 1027.); observing, when the water is deep and uncoloured, to sink the bait deep; when it is a little tinged, it is good practice to remove the float and to rove with the roe in a light and delicate manner, taking care, in both cases, to sink it as unperceived as possible, and to remove it slowly, to save the paste and to avoid losing a fish.

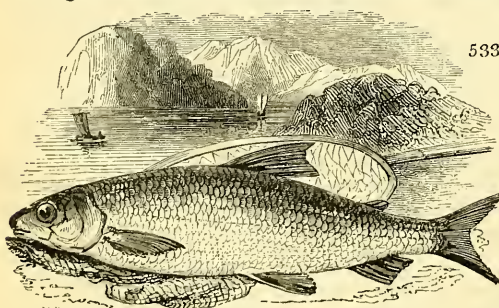
3530. *Sinking and drawing*, as well as *dipping and roving*, will be found excellent methods of taking grayling. Almost all the *Coleoptera*, or beetle tribe, are greedily taken by them when used in the manner directed for chub; but although the grayling also requires some caution in treating it, it is, on the whole, a bolder fish than the chub, particularly in its dartings from a pool after insect bait; yet it is curious, that in worm and gentle fishing, too fine tackle, or too much attention to quietness and obscurity, cannot be observed. The grasshopper is a very favourite bait with it, exhibited either by dipping and roving, or sinking and drawing. By the latter method, the grayling of the Hampshire rivers are very frequently angled for with these insects threaded on a hook, either in the usual manner, or otherwise by means of a hook leaded for the purpose (fig. 503. p. 1004.), which mode of baiting is peculiarly appropriate to sinking and drawing, and proves a very killing practice. Before the grasshopper is put on the hook, cover the lead and shank with light green or green and yellow silk mixed, and then thread the grasshopper over the bend. In the Wye, Dove, and Trent, we have ourselves employed this mode, and by it have taken the largest fish, particularly in the deep still pools of the Dove.

3531. *The grayling bites boldly and sharply*, and as its mouth affords little hold, a smart but not violent stroke is most likely to retain it. If the bait be very tempting to it, or it is well on the feed, it is often regardless of a scratched mouth, which is still more observable in fly-fishing: we have pricked them, particularly the smaller ones, more than twice, as their mouths have shown after they have been taken.

3532. *Grayling as a table fish* is considered an epicurean treat: the flesh is white and neither unpalatable nor unwholesome at any time of the year; but it is in its greatest perfection from October to February. The preparatory treatment before cooking differs in nowise from that of the trout. Angling for grayling at bottom is well taught in *The Rod and the Line*, published by the Messrs. Longman in 1849-50.

SUBJECT. 2. *The Gwiniad (Salmo lavaretus Pennant).*

3533. *Bluish salmon with broad scales, and nose-like snout. (Shaw's Linnaeus.)* Length about a foot; mouth resembling that of a herring; jaws equal; gill-cover silvery, powdered with black; belly flat; D. 14.; P. 18. (the first the longest); V. 12. (of a deep blue colour); A. 15. (*Fleming.*) In most of our angling treatises, the gwiniad comes on the stage, but has only to make his bow and retire, for he has but little part to act before



GWINIAD.

the angler. We present the following account of this fish from 533 Mr. Pennant, who informs us that it is found in Ireland in Lough Neagh, where it is called *Pollan*; and in Loch Mabon in Scotland, where it is termed *Vendissee*. The Scotch have a tradition that it was first introduced by their beauteous queen, the unhappy Mary Stuart; and as in her time the Scotch court was much Frenchified, it seems likely that the name was derived from the French *vendoise*, a dace, to which a slight observer might compare it from the whiteness of its scales: the British name, *gwiniad*, or whiting, was bestowed upon it for

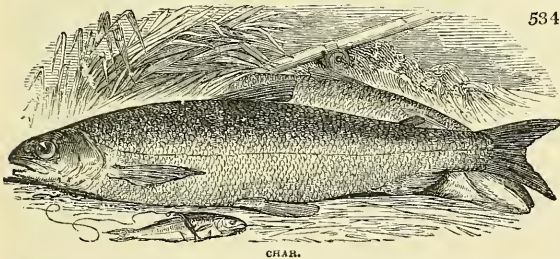
the whiteness of its scales: the British name, *gwiniad*, or whiting, was bestowed upon it for

the same reason. It is a native of the lakes in Cumberland; and of Wales, in Pembre Meer, or Llyntegid, near Bala in Merionethshire. In the lakes of the Alpine parts of Europe it is found, as in those of Switzerland (in that of Geneva it is named *ferra*), of Savoy, and Italy, of Norway, Sweden, and Lapland, where Schœffler asserts they are caught of the weight of ten or twelve pounds. "It is," says Pennant, "gregarious, and approaches the shores during spring and summer in such vast shoals, as to prove in many places, to the poor of inland counties, as great a relief as the return of the herring is to those who dwell upon the coast;" and he recites an instance of an *Ullswater* fisherman who took between seven and eight thousand at one draught. It is there called *Schelly*—a name which the inhabitants of Cumberland give also to the chub, from its being a scaly fish. It has long since been observed in Camden, that the gwiniad never wanders into the Dee, nor does the salmon ever venture into the Bala Lake; and, generally speaking, this is the case; but, by accident, the first has been known to stray as far as Landrillo, six miles down the river, and a salmon has now and then been found trespassing in the lake. The late Honorable Daines Barrington remarks upon this fish, that "it is universally supposed (and even by Lloyd, in his additions to *Camden's Britannia*), salmon are never caught in the Lake of Bala, although they are frequently taken in the river Dee, just below where it issues from the lake, whilst the contrary is observed with regard to the gwiniad, which is conceived to be a fish peculiar to the lake; but," says Mr. B., "I happened to see a salmon of about fifteen pounds caught in the lake, at least two hundred yards above the bridge through which the Dee issues; and although I never saw the gwiniad taken in that river, yet I was most authentically informed that several were caught, within three years, as low down as Landrillo, nearly six measured miles from the Lake of Bala: and with respect to the gwiniads being only in this lake, I can myself flatly contradict this notion, as the first parcel of fish which I happened to see in the market of Penrith, in Cumberland, were of this sort, and were brought from Ullswater, about four or five miles from thence." Of the angling for it we have nothing to say, as in our travels we never met with an angler who considered it worth his time to attempt to catch it.

SUBJECT. 3. *The Red Char, and the Gilt or Case Char.*

3534. *The red char* is the *Salmo salvelinus* of naturalists, as the gilt or case char is their *Salmo Alpinus*. On these fishes, if they be really distinct, we have only to remark, that there is yet much wanting to elucidate these two varieties, but which, as not attracting the practice of the angler, we shall not further attempt, than by giving Mr. Daniel's account. There are but few lakes in our island that produce the char, and even those in

no great abundance: it is found in vast numbers in the cold lakes on the summits of the Lapland Alps. The char (*fig. 534.*) affects clear and pure water, and is very rarely known to wander into running streams, except into such whose bottom is similar to the neighbouring lake. It is found in Winander



Mere, in Westmoreland; Ullswater, in Cumberland; in Llynn Quellyn near the foot of Snowdon; in certain lakes in Merionethshire; and, before the discovery of the copper mines, in those of Llanberis; but in the last, the fish have been nearly destroyed by the mineral streams. In Scotland it is found in Loch Tay, Loch Inch, and other neighbouring lakes; and in Fewin-Loch, Sutherlandshire. In Ireland the char is abundant in Lough Esk. Mr. Pennant describes the largest and most beautiful to have been sent to him from Winander Mere, consisting of five specimens,—two under the name of *case char* (male and female); a third was termed a *gilt char*, that is, a char which had not spawned the preceding season, and on which account it is reckoned to be in the greatest perfection; the two others were inscribed the *red char*, the *silver* or *gilt char*, which last are in Westmoreland distinguished by the *red*, from the flesh assuming a higher colour when dressed.

3535. *The case char* is said by those who advocate its individuality to spawn about Michaelmas, and chiefly in the river Brathay, which, uniting with another called the Rowthay, about a quarter of a mile above the lake, they both fall into it together. The Brathay has a black rocky bottom; that of the Rowthay is a bright sand; and into this the char are never observed to enter. Some of them spawn in the lake, but always in such parts of it as are stony, and resemble the channel of the Brathay: they are supposed to be in the highest excellence about May, and continue in perfection all the summer, yet are rarely caught after April. When they are spawning in the river they will take a bait, but at no other time, being commonly taken, as well as the other species, in what they call *breast-nets*, which are about twenty-four fathoms long, and about five where broadest. The gilt char on the contrary, we are told, is in spawn from the beginning of January to the end of March. They are never known to ascend the rivers, but always spawn in those parts of the lake

which are springy, where the bottom is smooth and sandy, and the water warmest. How much obscurity hangs around these varieties of salmon may become apparent from the following statement:—"They are taken in the greatest plenty from the last week of September to the end of November; at other times they are hardly to be met with: this species is in much greater estimation for the table than the other, and is very delicate when potted. Numbers thus prepared are sent to London, but are not all genuine; for there is a sort of trout caught in the Petterell (a small rapid river that runs near Carlisle, in the county of Cumberland), which is similar to the char in size, as fine in colour, and when potted not to be distinguished from it. These trout take the May-fly of both sorts, and all the other flies in season; and certainly assume the name, and rival the flavour of the char, amongst the epicures of the metropolis. The char, when fresh, has all the sweetness of the trout, with something of the taste of the red mullet. It must be observed, that this detail of the spawning season of the Westmoreland chars agrees nearly with that of the same fish in Wales; the last appear about a month later, keep moving from side to side of the pool, and then retire into deep water, where they are but rarely taken. Some have doubted whether the Welsh and English fish are of the same kind. Mr. Ray thinks there is no ground for doubt; the Welsh name *torgoch* signifies a red belly, which distinguishes the red char properly enough. In Wales, it is a prime dish at fashionable tables."

SUBJECT. 4. *The Salmon (Salmo salar).*

3536. *Silvery grey spotted salmon*, with the jaws (in the male) incurvated. (*Shaw.*) *S. rostro ultra inferiorem maxillam prominente.* (*Linn. Syst. Nat. p. 509.*) *S. Salar*—upper jaw longest, teeth on the vomer, and fin with about thirteen rays. Spec. char.: D. 14.; P. 14.; V. 10.; A. 13.; C. 21. (*Fleming.*)

3537. *The salmon* may be seen accurately figured in p. 956.; nor is it possible to deny our admiration of his size and general character. To the lover of good eating he is always welcome, and our very best anglers seek his acquaintance with much art, and many winning devices. It is therefore not to be wondered at that he is called the king of river fish; and whether we consider his beauty, his prowess, or his valuable economic qualities, he deserves the title. With the angler he has a very high reputation, and where opportunities occur of pursuing him (which in the south are not frequent) the sport has always been considered of the first character. The general length of the salmon is from two and a half to three feet, but sometimes much more: the male is principally distinguished by the curvature of the jaws, both the upper and lower mandible bending towards each other more or less in different individuals, and at different seasons. The general colour of both sexes is a silvery grey, of a much darker cast on the back: the sides of the male are marked with numerous small, irregular, dusky, and copper coloured spots; while those of the female exhibit only several rather large, distant, roundish, or somewhat lunated spots of a dark colour. Exclusive of these differences, the male is of a somewhat longer or more slender shape than the female: the scales in the salmon are middle sized, and not very strongly adherent.

3538. *The salmon* was known to the Romans, but not to the Greeks. Pliny speaks of it as being in the rivers of Aquitaine: Ausonius enumerates it among those of the Moselle. The salmon is a northern fish, being unknown in the Mediterranean Sea, and other warm climates: it is found in some of the rivers of France, which empty themselves into the ocean: it is found also as far north as Greenland; and is likewise very common in Newfoundland, and the northern parts of North America. Salmon are taken in the rivers of Kamtschatka, and recently have been caught with the fly in some of the rivers of Spain.

3539. *We are indebted for the annual visitations of this valuable emigrant to the powerful workings of the reproductive system, and it is in order to find a safe and eligible situation for depositing their spawn that salmon travel hundreds of miles up rivers, and brave difficulties and dangers innumerable, "forcing themselves," according to the accounts of Mr. Pennant, "against the most rapid currents, and springing with agility almost incredible over cataracts several feet in height."* Salmon are frequently taken in the Rhine as high up as Basle: they gain the sources of the Lapland rivers in spite of their torrents, and pass over the perpendicular falls of Lelikh and Ballyshannon in Ireland, and of Kennerth and Pont-aber-glaslyn in Wales. "Of these feats," says Mr. Pennant, "I have been witness, and seen the efforts of many scores during the time of my stay; some successful, and others driven down by the current for a more fortunate exertion: the fish seemed to spring up quite straight, and with a strong tremulous motion, completely refuting the vulgar error of taking their tails in their mouths when they make their spring." Our limits force us to principally treat on this noble fish as a local inhabitant, and the great archetype of a numerous and important family, and likewise as a very principal object of the angler's pursuit. His size is sometimes considerable; the largest we have heard of weighed seventy-six pounds. Mr. Pennant mentions one of seventy-four pounds also, and it may be observed that the general figure of the body of this fish is well adapted to conceal a very great weight under an apparently moderate bulk; thus one, which was thirty-eight and a half inches in length, and twenty-one in girth, weighed twenty-two pounds and a quarter. The tail is slightly forked, which serves at once to distinguish it from the sea trout, as well by its greater breadth as by its being less spotted; the head of the salmon is likewise proportionally smaller than that of the sea trout. Its usual colour is purplish black towards the back, softening into grey, and becoming white towards the belly; and when these colours are clear and determinate, the fish may be esteemed in season; but on the contrary, when it is reddish, or approaching to a light brown, it is out of season. It must however be observed, that the colours vary very much in different specimens, and in the fish of different waters; some have very few spots; in others the spots are numerous, and extend even to the gill-covers.

3540. *The male and female salmon* are distinguished from each other by stronger marks than are observed between most fish, as may be seen in the excellent description of Shaw; to which it may be added, that the lateral line in the male is placed rather lower than that of the female. The grand sexual character is, however, obtained from the incurvation of the jaws, principally about spawning time, and afterwards when the fish is out of condition, and called a "kelt." Touching the excrescence in the lower jaw of the salmon, very great errors have prevailed, many considering it is used by the fish in excavating the spawning bed. Neither its position inside the jaw, nor its consistency, which is not bony, but a soft cartilage, can be of any use in excavating sand and gravel. It may, however, be of use, but this is mere conjecture, in enabling the fish to keep its jaws more firmly closed whilst it works with its snout and head in forming the spawning-bed. But then the female salmon, which assists in digging the bed, has not this excrescence. It is also larger after the fish have spawned than before. As the fish drop down to the sea after spawning, it gradually diminishes, and entirely disappears after the fish have been a few weeks on their sea feeding grounds. The generality of *Salmonidae*, whether migratory or not, have not this excrescence; and as they dig their beds after the manner of the salmon, it is quite clear that it is not necessary for the process of excavation. The female salmon, which has neither marked elongation of the under jaw, nor the excrescence alluded to, frequently digs the spawning bed without any material assistance, as, for instance, when unable to find a male salmon to im-

pregnate her ova, she is obliged to have recourse to a very small grilse, or even to one or more diminutive male common trout. Mr. Andrew Young, of Sutherlandshire, the best authority on the history and habits of salmon, pronounces the excrescence in question useless.

3541. *A curious circumstance* in the natural history of the salmon is, that such as are taken in our rivers are seldom observed to have any thing within their stomachs; from whence some have formed an opinion that they seldom or never eat, but that whatever they do take in, is in mere play or wantonness. To combat such an opinion seriously, would be to fight a Quixotic battle, and get laughed at in our triumph. If salmon eat for wantonness, what becomes of the matters taken in? They must be digested or regurgitated, or death would ensue; and we suppose there are few weak enough to think that a complex digestive system was given them merely to play with. At sea they are, however, taken with small fish and sand eels within them, and these are known to be favourite food with them. Their occasional voracity in taking worms, and their partiality for living minnows, gudgeons, and other live fish, is notorious, and forms the ground of the angler's practice under water, as that of fly-fishing above proves not only that they are predaceous in the extreme, but that they also, like the other members of the family, seek a variety of food in winged insects. The circumstance of their being, like herrings, seldom found with any thing within their stomachs but mucus, may arise from a capacity of very quick digestion, and a peculiarity in their mode of taking in food, in small quantities at a time, but repeating it frequently, by which the stomach may be in a constant state of capacity or fitness for immediate and quick digestion. This singularity can hardly arise from the cause assigned to it by Sir Humphry Davy, that salmon, at the time of their migration from the sea upwards, may be unwilling to load themselves with food: but allowing this any force, it would apply only to such as are taken from a pool, in which they have been observed to have stationed themselves for many days, and in which they have been caught by means of a fish-bait, which they must have chased for food. Food, very often the flesh of the sea-trout, is found in a macerated state in the stomachs of salmon caught in the nets in the tidal ways of rivers. Herrings have been taken from their mouths, before they had time to swallow them. The truth is, salmon whilst at sea feed voraciously and digest with miraculous promptitude. Hence their wonderful growth.

3542. *The very different states in which the salmon appears* when it leaves the sea and when it returns to it, have always been a subject of observation. When it enters the mouths of the rivers, it presents a magnificent specimen of health and beauty; nothing now deforms the newly arrived guest, save a few of the *Monoculus Piscinus* (not the *Lerneæ Salmonæa* as stated by Mr. Pennant). Some persons however are short-sighted enough to suppose, that to escape from these the salmon is principally prompted to leave the sea. But much more cogent reasons prevail; for at this time the evolution of the milt and spawn is not very considerable, and it is now that both male and female, particularly the former, are in the highest state of edible perfection, and are then called clean fish by fishermen. As the process of milting and roeing advances, extreme pressure appears to injure the vital functions; the animal oil and all interstitial matter are absorbed, and the fish becomes thence lean in flesh, and what remains is in a great measure colourless and insipid when dressed; sometimes it proves unwholesome also. Salmon in this state are termed red fish, or kipper, and are avoided by all who understand them. The female, as might be expected, suffers most in the process, and therefore ought to be avoided even more carefully than the male. These unfavourable appearances arrive at their height a little previous to spawning: they also continue during the time of it, and remain until the fish again reaches the sea. On their passage downwards to the salt waters, salmon are found not only affected with teniæ internally, but with lerneæ externally; both of which parasites they get rid of by the renovating qualities of the salt waters. It is observed that the male fish retire to the sea earlier than the female, which is known by those that are taken on their passage downwards; also it is notorious that after the spawning season, the fish of either sex are termed kelts, or *foul fish*. It is the habit of salmon to migrate annually to the sea for the purpose of obtaining food necessary for their physical development; having obtained a sufficiency of which they return to their native rivers, in which their spawn matures, and in which it is deposited, impregnated, and incubated.

3543. *Salmon fry* are found all the year round in salmon rivers, because salmon breed more or less from September to March inclusive. They are properly called salmon fry as long as they retain their transverse bars, erroneously called parr-marks, which do not disappear until they are a year old. They then assume a silvery coating, and are called smolts. At this age their first migration to the sea takes place. They return the same year to their native rivers, and are then grilse. On their next or second return from the sea to spawn for the second time they are salmon. The size of grilse or salmon does not depend on age, but on capacity for growth, or the length of time they remain at sea, and on the quantity and quality of food they find there. A grilse may be larger than a salmon, as a Dorking fowl of six months' old may be larger than a bantam of six years. There are rivers in which salmon never attain the weight of ten pounds; others in which grilse are

often of that weight, and salmon of the weight of fifty pounds. They are all however the same genus.

SUBJECT. 5. *Bottom Angling for Salmon.*

3544. *Angling for salmon*, in any shape, is a noble sport; and although the methods are not greatly diversified, they have all a masculine character about them that greatly attracts the enterprising fisherman. But it is remarkable how meagre are the instructions to this effect contained in our old reputed works on angling. Mr. Salter contents himself with telling us that salmon are "fished for at *bottom*, both in the Thames and Medway, with a strong leger-line, and a No. 1. hook tied on gimp, which is whipped over with silk, waxed with shoemaker's wax: the bait is a raw muscle, prawn, or cockle, taken clear from the shell. They will, however, sometimes take a small fish, such as is used when trolling with a live bait for pike, and also large well-scoured lob-worms, of which put two on at a time." To compensate his omissions, we beg to quote something relative to the subject, which appeared in an article in the *Quarterly Review*, attributed, we believe, with justice, to Sir Walter Scott.

3545. "*Salmon fishing* is to all other kinds of angling, as buck shooting to shooting of any meaner description. The salmon is, in this particular, the king of fish. It requires a dexterous hand and an acute eye to raise and strike him; and when this is achieved, the sport is only begun at the point where, even in trout angling, unless in case of an unusually lively and strong fish, it is at once commenced and ended. Indeed, the most sprightly trout that ever was hooked shows mere child's play in comparison to a fresh-run salmon. There is all the difference which exists between coursing the hare and hunting the fox. The pleasure and the suspense are of twenty times the duration—the address and strength required, infinitely greater—the prize, when attained, not only more honourable, but more valuable. The hazards of failure are also an hundred-fold multiplied; the instinct of the salmon leads to the most singular efforts to escape, which must be met and foiled by equal promptitude on the part of the angler." Bainbridge likewise, one of our best practical fly-fishing guides, disappoints us much, in hardly mentioning the manly method of minnow spinning for salmon, when the fly, from the state of the water, is inert; and he is equally unsatisfactory on the killing one of trolling and roving, when both minnow and fly-fishing are impracticable: nay, that great piscatory character, Halieus, who, as his friend and eulogist, Sir Walter Scott informs us, "is not only familiar with the most remote streams and lakes of North Britain but with those of Ireland, where the salmon fisheries flourish to a great extent,—nay, he has followed his sport through most countries in Europe, and killed fish, the description of which makes an Englishman's mouth water, in rivers, the names of which set his teeth on edge,"—even he disdains so much as to hint at these methods. For our own parts, although we cannot boast of experience so multifarious and extensive, yet, as our own has not been very inconsiderable, and as we have frequently practised the methods alluded to in many of the rivers of the kingdom, so we hope to lessen the chasm by citing to our aid some of later date, who have expressly given directions for pursuing these fish *under* the water, after the manner in which they, as well as ourselves, had practised the sport. We need not tell the angler that the salmon is to be chiefly found in large rapid rivers, especially in such as have pebbly, gravelly, and sometimes weedy bottoms. When feeding, this fish generally prefers the rough and upper parts of gentle streams, and the tails of large ones; when gorged, they retire to the deep broad water; when in motion, they swim very fast, usually in the middle of the river, and near the ground: they also move more at night than in the day, halting at convenient places, as though in ambush, under bushes, weeds, banks, rocky projections, or stones. The salmon bites best from six until eleven in the forenoon, and from three in the afternoon until sunset, especially when there is a moderate breeze upon the water. The chief months to angle for them are, March, April, May, and June, though they will take a fly until October, but they are then out of season; and if tried for, let it be with lob-worms and minnows.

3546. *Worm-fishing for salmon* should be practised with a long and firm rod of seventeen or eighteen feet in length, according to circumstances: the economic angler may make his minnow trolling rod serve his purpose: we never used any other, and found that ours, which was eighteen feet long, served both purposes fully. The tops employed were not, however, the same: that for worm-fishing was somewhat finer than the other, the minnow top, although sufficiently elastic, was altogether formed to resist the effect of the action of spinning the bait in rapids. A full sized multiplying reel on the last construction, or otherwise a large single one, should be adapted to the rod, sufficient to contain at least forty yards of the best silk and hair line, twisted very stout, looped to a foot-length of gut, with a hook link of double or of the very strongest single salmon gut, which will, in all general cases, be found sufficient; for it is surely better to gain three ordinary fishes by fine fishing, than one out of the usual course by other means. It was thus that we usually fished: but whenever circumstances, as the nature of the water, or the reputed size of its fish require it, double the gut, or even use fine gimp. A tripping bait for scowers and moderate currents we have often found successful; in which method of using the worm, the line must be shotted more or less, according to the force of the stream, to within four inches of the bait. Arm a hook,

No. 3, 4, or 5. with two marsh-worms, one hung over the other; sink them in the current, or in the easy descent to a pool, allowing them to trip over the ground by lightly elevating the head, as the force of the stream moves the line forwards. In this way, by momentary stoppages, the bait meets the eye of the salmon, who usually lies with his head up the stream, in a bold scower or eddy, or within the area of some deep pool, towards the verge of it. The Trent anglers take many salmon with worms in spring.

3547. *Fishing with lob-worms for salmon* is often practised by means of a leger-line; but as the coffin-lead is not often required to be altogether stationary, it is not necessary that it should be near so large as that employed for barbel. Use a No. 1, 2, or 3. hook, run it through the middle of a lob-worm well scoured, and pull it above the shank; then take a second, and put the hook in an inch below the tail, drawing it on the hook about three-fourths of the length, the head of the worm being at its point; then draw down the first to the latter worm. Drop this bait into any likely situation, and the current will give motion to it by means of the loose portion of line below the lead; and when it has remained a few minutes without a bite, gently move it a little up the stream, and again let the plumb rest at the bottom. Drop it also in strong eddies, and at the declivities leading into deep pools, and particularly on the edges of the rocky precipices under the water. These will be found killing methods to play lob-worms, and they are seldom so shown but that they are taken, if salmon are present and on the feed.

3548. *The time when the water is too much discoloured for fly-fishing*, is that in which angling with the worm is peculiarly adapted to the taking of large salmon. If the colouring be considerable and the water much agitated, use lob-worms; but should the water be moderately coloured only, the largest of the other varieties, as brandlings and marsh-worms, sometimes kill best; when there is wind while the water is clearing, almost any worm will be readily taken. In very bright weather and bright water also, small worms well shown on a fine hook, as No. 4 or 5., will often attract when flies of all kinds fail. It is necessary in all these practices to observe, that the salmon requires the utmost caution in the approach to his haunts: to insure success, the angler should if possible be absolutely hidden, the shadow of even the rod and line ought not to fall on the water; but all ought to be still and quiet around, to lull into security this watchful fish. Except in very gloomy blustering weather, to insure sport begin your fishing as early as possible after daylight, and continue it in the evening as late as any light remains. In bright nights it is not unusual to fish all night long with the lob-worm both above and below, that is, on the top and in the depths. If much dew is falling salmon will not bite.

3549. *When a salmon takes the bait*, you will feel the line tighten; sometimes you will feel a sudden pull: in the former instance, give the fish time to gorge, and then strike pretty sharp, but not violently; in the latter case, it is probable the fish has hooked himself, and you should strike more moderately; but, in both instances, keep a tight line. Salmon generally take the worm gently within their lips, as it were, and then swim away to gorge it. While they are moving you must not check them, but give them line until a sudden tightening of it tells you the bait has been gorged. Then strike gently, and play your fish boldly, according to the strength of your tackle. We prefer for worm-fishing three or four lob-worms or large blue heads on the hook at the same time, without any lead.

3550. *The landing of the fish* is usually done by means of a gaff-hook, which has been already described and figured (p. 986.). If one be not at hand, draw the fish on a bank, and by putting the finger into the gills draw it out. The fickle state of the appetite of salmon at sometimes will make it necessary for the angler to try various other baits; all the larvæ are occasionally taken by them; but more frequently the fresh water snails of every variety are found enticing. The muscle, limpets, cockle, shrimps, &c. &c. are often used; and it may be almost said that there is no bait whatever taken by any other fish which salmon will not likewise sometimes be allured by; therefore it is prudent, when the angler is satisfied that there are salmon in the water before him, to vary his bait to suit their tastes. The marine testaceous baits, we have found to answer best in or near tideways, in which situations they will also take the sea-worm, called the lurgan (*Nereis carulea*), sometimes better than the earth-worms; and it is observed that salmon are more ready to do so when the tide is rising than when it is falling: it is particularly so with regard to shrimps, which they will occasionally seize, when drawn on the top of the water, with great eagerness. With a rising tide insects are stirred up, and small fish forced forward by the current, which the fish are then on the look-out for and ready to receive.

3551. *Fish baits, used either by trolling or spinning*, are also very tempting to salmon. We have occasionally killed successfully with small roach, dace, and bleak, but particularly the latter. Salmon will likewise readily take gudgeons, either by spinning or on a gorge-hook. When spun, take off a breast fin of one side, and a vent fin of the other. The method of trolling with these various baits in nowise differs from that already detailed with fish baits on the gorge-hook generally. The practice proves a very convenient one from the sides of wide rivers, or wherever the salmon haunts cannot be approached sufficiently near to spin a bait; for the gorge-lead will allow it to be cast to a considerable distance. This proves a good

method also in waters of extreme depth, as in lakes, &c.; and there a trolled bait likewise often shows better from a boat than a spinning bait. The spinning bait is however one of the most killing methods among all those employed by the angler in the capture of salmon; and we have to remark, that whatever was the size of the fish, we have not found them so eager to take a very large bait as a moderate sized one. Thus there appear few baits more successful than a full grown minnow when it is well spun; but when the water is much coloured, a bleak, if it can be procured, is to be preferred. The methods employed and the tackle used are here also exactly the same with those already directed for similar fishings for trout, except that every part of the apparatus should be stronger. The rod proper for these occasions has been before noticed; the line should be the same as for the worm practice; the minnow harness ought to be of treble gut, except the last length, which may be double only, but very evenly twisted, and made from the choicest picked links; for bleak spinning the hook used should be an extra sized No. 1. Salmon-fry, graylings, or even small trouts, are also excellent baits for the same purpose; and, in fact, no others can be procured in some of the northern rivers. When we employed these, we used leaded hooks made on purpose, two sizes larger than No. 1., which we spun minnow fashion, and took by their means many a good fish.

3552. *As a general bait however*, wherever minnows are to be procured, we prefer them to all others: the largest salmon will seldom refuse a minnow if well shown; neither is it too large for the smallest, nor for the trout which may possibly be in the way, by which the chances of sport are increased. Under this view of the subject, with small baits and fine tackle, both large and small fish may be captured by them; but as regards the tackle, this must be received with limitation. In some of the Scotch and Irish lakes, where a fish of twenty or five-and-twenty pounds may be hooked, it would be most unwise not to be prepared accordingly: here a common pillar winch only should be employed, with sixty or eighty yards of powerful line, and armed with strong hooks firmly whipped to gimp instead of gut. In very wide rivers, and in lakes or lochs, a boat is a great assistance in salmon fishing, and in many situations it is indispensable. From a boat either anchored, rowed, or gently drifting, by trolling with salmon-fry and small trout, very large fish are taken. Lake fishing, where it can be procured in perfection, affords glorious sport. For our own parts, we have ever considered the proprietorship of a boat on an excellent fishing lake as one of the greatest sporting luxuries, where the mountains crested with rock, and skirted with wood to the water's edge, are reflected on the surface of the great profound. Here even the aged angler may look for his favourite amusement with the same hope as that which gilded his earlier and lustier days; for, as observed by the able critic on *Salmonia*, "by the help of a boat (fishing) may in many situations be followed even by the aged and infirm, if possessed of the requisite skill; and so much does dexterity supply the want of bodily strength, that we have known a gentleman, in a very weak state of health at the time, kill a fish of twenty pounds' weight after playing him for an hour."

3553. *Of salmon as a table fish.* The lower classes of English poor who live inland, and hardly taste this fish even stale once in seven years, and the Scotch peasantry who are, or rather *were*, obliged to eat it five days out of seven, would both equally wonder that so much theory and so much practice have been expended on a dish of fish. The taste of mankind stamps not only a value on particular edibles, but almost an equal one on the culinary preparation of them, and the condiments taken with them. As regards the trout, we have entered fully into what Colonel Hawker calls the *ne plus ultra* method of treatment, from the fish's exit from the water to its appearance on the table of the professor of good eating. We will now borrow not only the matter, but the dress of the subject also from Sir Humphry Davy, who, having brought a salmon on shore, exclaims, "Now gaff him; strike as near the tail as you can. He is safe; we must prepare him for the pot. Give him a stunning blow on the head to deprive him of sensation, and then give him a transverse cut just below the gills, and crimp him by cutting to the bone on each side, so as almost to divide him into slices; and now hold him by the tail, that he may bleed. There is a small spring, I see, close under that bank, which I dare say has the mean temperature of the atmosphere in this climate, and is much under 50°; place him there, and let him remain for ten minutes, and then carry him to the pot, and let the water and salt boil furiously before you put in a slice, and give time to the water to recover its heat before you throw in another, and so with the whole fish; and leave the head out, and throw in the thickest pieces first." (P. 94, 95.)

3554. *By these manipulations*, as already noticed with regard to the trout, the violence and suddenness of the death has tended to corrugate the muscular fibre, and it even becomes crisped as it were into hardness by the further violence of crimping; at the same time the gelatinous interstitial matter, called the curd, which is an essential particular in the flavour, is preserved entire by the cold, and then solidified by a boiling temperature additionally heated by salt. The old saw, that "use is second nature," is verified here; for we well remember, when in Ireland, eating fresh from the water, part of a Boyne salmon, the flavour of which we by no means admired. It appeared to us hard and dry; and as it

fell into apparent pulverescence under mastication, instead of presenting a consistent mass, it was some time before we could at all relish it: on the contrary (like the first regal George with his stale oysters), we sighed for the less adherent fish, with its curd dissolved into oil and softening the flakes between which it flowed. It is probable also that the slight early decomposition tends to heighten the flavour to palates accustomed to it. We were soon, however, taught to prefer the natural taste of the fresh fish; and as subsequent years presented these objects of our own taking, we became fixed in the preference.

3555. *The sauce used with fresh salmon* by the northern gastronomers, as we are informed by Halieus in *Salmonia*, is nothing more than a spoonful of the salted liquor in which the fish has been boiled, the only additional condiments allowed being a little lemon-juice, or in its absence vinegar and pepper.

SECT. XVIII. *The Varieties of the Salmon.*

3556. *The head of the family having been described*, and it being our anxious wish to offer something like a correct guide to our brother anglers by our descriptions, we would fain introduce the principal remaining personages of it also, with a table of their lineage and different degrees of relationship to each other, and to this their great archetype. In the course of our readings and journeyings, however, we have seen such a motley group of professed family descendants (orthodox and non-orthodox, for the scandalous chronicle attributes incontinence even to the venerable founder of the race), with brothers, half brothers, and cousins without end, that we are absolutely bewildered; and though amidst the infinity of nominal introductions made to us by divers persons and in divers places, we were still more frequently presented with those of Messrs. *sea trout*, *bull trout*, *phinoch*, *torgoch*, *case-char*, *grey trout*, *white trout*, &c. &c. among the full grown members of the family; and of *samlet*, *sampson*, *grayling*, *parr*, *fingerling*, &c. of the small fry: we begin to suspect that we have been introduced to the same individuals several separate times, but under a new title; and we are also uncharitable enough to surmise, that the very best friends of these many-named aquatics, and even such as live immediately among them, know little more of them than ourselves.

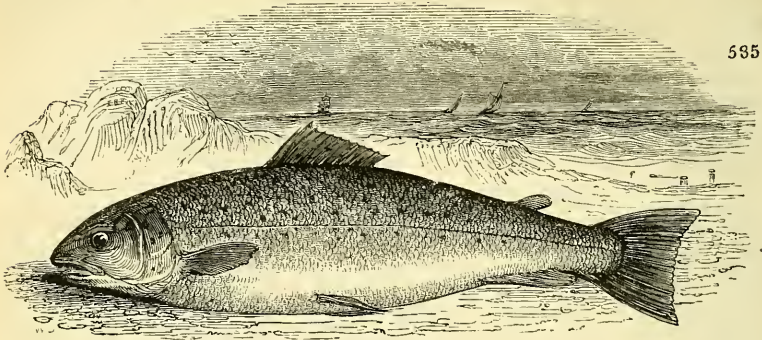
3557. *The bull trout (Salmo eriox Linn.)* is also known as the grey trout, whistling, and round tail. That great angling philosopher, Sir Humphry Davy, in the first edition of his *Salmonia* introduces us to a well known half brother of salmo, the sea trout, under the name of *Salmo eriox*, but whom other friends of the family evidently consider to be a distinct personage; and this author's second edition would lead us to suppose that he had adopted that opinion, as there we again meet with him under another questionable title, that of *Salmo Trutta*: neither is that the only instance of discrepancy on the subject in this admired work; a fact which further helps to prove, that our present knowledge with regard to the various fish who bear a generic or specific relationship to the salmon, is yet very limited and uncertain. Our great master Linnæus has been contradicted by subsequent naturalists. Dr. Shaw has also ceased to illumine us even; and Dr. Fleming, on whom, by living amongst the family, we rested our last hopes for full information, is much at variance with other authorities. In some instances he seems not to place much dependence even on his own nomenclature in regard to this ill defined family, although on most other subjects the critical acumen of this gentleman is unquestioned. In our opinion all migratory trout are varieties caused by "crosses" between the salmon, sea and common trout, and afterwards by the interbreeding of those crosses. The varieties of non-migratory are caused by crosses between lake and river trout. The nomenclature of trout is exceedingly imperfect, and we fear will long remain so. It would take a long and observant life to classify characteristically the infinite varieties of trout.

SUBSECT. 1. *The Salmon Trout (Salmo trutta Linn.)*

3558. *Purplish grey salmon*, with the head, body, and dorsal fin bedropped with black spots. (*Shaw.*) *S. oculis nigris iridibus brunneis, pinnâ pectorali punctatâ.* (*Linn. Syst. Nat.* p. 609.)

3559. *S. Trutta*, sea trout, or salmon trout of Mr. Yarrell, bears the following generic characters:—Gill-flap with nine rays; jaws nearly equal. (*Fleming.*) Mr. Yarrell describes it as distinguished by the gill-cover being intermediate in its form between that of the salmon and bull trout. The line of union of the operculum with the sub-operculum and the inferior margin of the sub-operculum is oblique, forming a considerable angle with the axis of the body of the first. The posterior edge of the pre-operculum is rounded, not sinuous. The teeth are more slender and numerous than they are either in the salmon or the bull trout. It is the white trout of Devonshire, Wales, and Ireland; also known in the Esk, Eden, &c. Dr. Fleming says of this fish, that the flesh is red, especially in those which have the palate dark coloured; and that its migrations are nearly similar to those of the salmon. The samlet, or parr, of Pennant (*Brit. Zool.* iii. 303.) is now by some considered as the young of this species, but more correctly by others of the salmon.

3560. *The salmon trout* (fig. 535.) is by Mr. Pennant, we believe, called the sea trout after Willughby. Dr. Shaw likewise describes it under this title. It is however remark-



SEA TROUT.

able, that the northern fishermen all of them strenuously deny their identity, and contend that the difference between the two is constant and well defined; as however we shall have occasion again to refer to the subject, at present we shall pass on to the consideration of it or them under Mr. Yarrell's name of salmon trout.

3561. *The salmon trout* therefore, if we depend on the lists of some authors, must be a fabled animal; yet among others it is described with all its characters and attributes. The author of *Salmonia*, as we have just shown, considers that all the varieties of the salmon family, which he has been able to identify in the rivers of Britain and Ireland, to be the common salmon and the sea trout. It is however worthy of note, that he elsewhere mentions salmon trout, but in such a manner as to leave its true character questionable; and it is noticed, not as an inhabitant of our isles, but as one found in the Traun Sea, or more properly Traun Lake, of the Germans. On the contrary, the salmon trout which enters our popular lists is of very old character, as an individual among us: it is also a distinct and highly appreciated object of the angler's sport, as well as an important economic species.

3562. *The bull trout*, Mr. Yarrell however acknowledges as a distinct variety. The characters of the gill-covers of the salmon trout and the bull trout, he observes, present great differences. In the bull trout the line of union of the sub-operculum is oblique, forming a considerable angle with the axis of the body of the fish. The posterior edge of the preoperculum is also rounded, not sinuous, as in the bull trout. The teeth of the bull trout are longer and stronger than those of the salmon, and the tail is square. In its growing state it is a resident of the Tweed, and is not a bull trout until its majority. It is common in South Wales, the rivers of Dorsetshire and Cornwall. Of our own knowledge, it is to be caught in Cumberland, where it has been taken of sixteen and occasionally of seventeen and eighteen pounds. It is a bold free-taking fish, but the angler will not find it, as an edible, so good as the salmon; but as a bold and powerful fish it yields excellent sport.

SUBJECT. 2. *The Parr, or Samlet* (*Salmo salmulus* Willughby).

3563. Mr. Yarrell says of the parr, which abounds in our salmon rivers, that it has given rise to more discussion than any other species of the genus. Presenting as it does those lateral marks which are seen on the young trout, and also on the young of the other *Salmonidae*, it appears to have always been protected by legal enactments, as the acknowledged fry of the salmon species, either grilse, bull trout, salmon trout, or river trout. But in the words of Mr. Yarrell, that the parr is not the young of the salmon, or of any other of the larger species of *Salmonidae*, as still considered by some, is sufficiently obvious from the circumstance, that parrs by hundreds may be taken in the rivers all the summer, long after the fry of the year of the larger migratory species have gone down to the sea. The dusky bars, from which the parr has obtained the name of brandling and fingerling, is no proof whatever of its connection with the larger species; for these are all obliterated by degrees, and at periods depending on the ultimate size attained by the individual species when adult; the soonest probably in the salmon, and certainly the latest in the parr. In proof of the individuality of the parr it may be stated, that there are streams in which parrs abound, although salmon never visit them; and further, that in the Western Isles there are lakes to which salmon resort, yet no parr have been found there. The acumen of Sir William Jardine has been exercised on this subject most satisfactorily; and we would refer the reader to the *New Philosophical Journal* for January, 1835.

3564. *Respecting the parr* great discoveries have been recently made by Mr. Shaw of

Drumlanrig and Mr. Andrew Young [See '*Book of the Salmon*,' published by the Messrs. Longman]. Mr. Shaw has completely proved that the fish erroneously called the "parr" is the young of the salmon previously to its assuming the silvery or migratory coat. Mr. Young has proved that the migratory coat is assumed at the age of twelve months. There is great similarity between the trout which Mr. Shaw calls the parr and the young of salmon at the age of eight months. They are about the same size, and are marked with transverse bars of almost similar appearance. But on close examination of the head and fins of the parr and salmon-fry, a judge will discover that the former is a perfectly shaped mature fish; the latter an imperfectly shaped young fish, the offspring of a very large species. The fins of the salmon-fry are much larger than those of the pure parr; so is the head, which is of imperfect formation.

SUBSECT. 3. *The great Grey, or Lake Trout (Salmo ferox Jardine & Selby).*

3565. *This splendid fish* appears to have been first recognised in Loch Awe, and was afterwards noticed by Pennant as a native of Ullswater. It is known also in Lough Neagh in Ireland. It has been supposed to be identical with the great trout of the Lake of Geneva. It is also common in Loch Awe, Laggan, Loch Shin, Loch Loyal, and Assynt. Mr. Yarrell tells us, that the length of the head of this fish is to the head, body, and tail, as one to four and a half; the depth of the body not equal to the length of the head; the teeth large, strong, and numerous, occupying five lines.

3566. *Bull trout.* Gen. char.: upper jaw longest; anteriorly only, but both are longer and stronger than those of the salmon; teeth in the vomer; the commencement of the dorsal fin is half way, anal fin with about ten rays. Spec. char.: B.11.; D.13.; P.14.; V.10.; A.10.; tongue with a row of teeth on each side, and a single row on the lower jaw. (*Fleming.*)

3567. *This species*, the bull trout, is nearly as large as the salmon, and is well figured in Yarrell. It is more lengthened in shape than the salmon; the colour is nearly the same; the flesh is white and insipid. Such is the account which Dr. Fleming gives of this fish. Dr. Shaw describes it thus:—"Shape like that of the salmon, but considerably longer in proportion; length from two to four or five feet; colour silvery grey, with numerous round, deep brown spots; back dusky; fins (except the ventral, which are yellowish) pale purple, thickly spotted with brown, not excepting even the adipose or small fin; tail forked; abdomen plain or unspotted; scales rather small; lateral line nearly straight. Inhabits the Danube, the Bavarian and Austrian lakes, and the rivers of Russia and Siberia: not much esteemed as a food, the flesh wanting firmness." It would appear that it is not considered by Shaw as a British native. We are ourselves however disposed to think, that the scurf or bull trout of anglers is not the *Salmo hucho* of naturalists, which is without doubt a scarce fish in our island; whereas the bull trout of fishermen is very inferior in size, and by no means uncommon. We consider it a mixed breed, between the salmon and some sort of trout.

3568. *Captain Williamson* says, that "the fish set down by authors as bull trout, bleachers, bulgers, scurffs, white trout, whiting, or sowin, are all names for this remarkably fine fish, which comes up from the sea late in the spring, and is to be found until the first frosts, when they return to the salt water. Some spawn in the rivers in September, and others are to be found retiring from them full of roe; but as this only occurs where the northerly winds prevail strongly in October, we may perhaps be right in concluding, that they cannot bear cold weather: their very late access from the sea is some confirmation of this opinion. Some are deeper coloured on the back than others, but in general there is a brilliancy on every part which causes them to appear quite white at a distance. They are of a light bluish brown down the backs, and are beautifully marked with spots of red, a few smaller black ones being intermixed all over the sides, down to the lateral lines, which are richly but delicately coloured. The head of this fish is bluff, not unlike that of the chub; its fins are strong and stiff, and the tail is broad, but not much forked. They are extremely partial to brackish water; and are caught in great numbers at the entrance of rivers by the fishermen, who, when the tide is coming in, carry their nets out obliquely from the shore, and sit in their little *cob-bats* at the outer end, watching for the fish, which when entangled agitate the net considerably: their general shape is longer than that of the common trout. Some authors state that this fish weighs from one to three pounds, but my own experience tells me they generally run from two to ten, or even to twelve pounds. I once saw a whiting of that size: I have bought them frequently weighing from six to ten pounds; and my own hook has procured me more than one very little under eight."

3569. *Sir Humphry* describes the *Salmo hucho*, huchen, or bull trout, as common to the waters of Austria. "It is," he says, "the most predatory fish of the salmon genus, and is made like an ill fed trout, but longer and thicker. He has large teeth, more spines in the pectoral fin, a thicker skin, a silvery belly, and dark spots only on the back and sides. I have never seen any on the fins. The ratio of his length to his girth is as 8 to 18, or, in well fed fish, as 9 to 20; and a fish eighteen inches long by eight in girth weighed sixteen thousand two hundred and fifteen grains. Another, two feet long, eleven inches in girth, and three inches thick, weighed four pounds two ounces and a quarter. Another, twenty-six inches long, weighed five pounds five ounces. Of the spines in the fins, the anal has nine, the caudal twenty, the ventral nine, the dorsal twelve, the pectoral seventeen. *Having numbered the spines in many I give this as correct.* The fleshy fin belonging to the genus is,

I think, larger in this species than in any I have seen." It migrates in the spring, and reaches to thirty or even forty pounds' weight. It is represented as like the sea-trout in whiteness, but as being much narrower in shape. We would recommend the inquisitive reader to the second edition of *Salmonia* for a very interesting account of the *Hucho*.

SUBJECT. 4. *The Phinock (Salmo albus Fleming).*

3570. *Salmo albus*. Silvery grey salmon, with very bright abdomen; dorsal fin spotted with black, and black forked tail. (*Shaw*.)

3571. *S. albus*. Gen. char.: jaws nearly equal; teeth numerous, recurved. Spec. char.: This species seldom reaches a foot in length; the back is nearly straight; the colour above greyish-black; the belly silvery white; the scales small; the caudal-fin is black, and the pectorals yellowish towards their extremities; B. 11.; D. 12.; P. 14.; V. 9.; C. 24.; the flesh has a reddish tinge. (*Fleming*.) This fish leaves the sea about July, and spawns in August or September. It appears to have been first described by Pennant, and was unknown to Linnæus. Dr. Fleming conjectures that it is the *Salmo Cumberland* of Lacépède. Mr. Pennant says that "the phinock comes from the sea into the river Esk in Cumberland, from July to September, and is called from its colour the whiting. On their first appearance from the salt water the *Lerneæ Salmonæ*, or salmon louse, adheres to them: they both milt and spawn, but no fry has as yet been observed. This is the fish called by the Scotch *phinoes*. The whole of the body is of an elegant form; the lateral line is straight, and placed rather lower than in the generality of fishes; the colour between that and the top of the back dusky and silvery intermixed, beneath the line of an exquisite silvery whiteness; the first dorsal fin is spotted with black, and much forked; they seldom exceed a foot in length, and weigh from one to two pounds; when dressed their flesh is red, and of most delicious flavour. Various opinions are formed with regard to these fish: some suppose them the young of sea trout, others those of the salmon, while by a third set they are considered as altogether of spurious origin. They are sea-trout in their second year.

SUBJECT. 5. *The Salmon Fry (Salmo salmulus), with their congenerous Varieties.*

3572. *Bluish grey salmon*, with distinct reddish spots, and forked tail. (*Shaw*.)

3573. *In all the rivers communicating with the sea*, and frequented by the members of the salmon genus, are seen innumerable small fish, which have occasioned great diversity of opinion with respect to their origin. These are known by the various names of salmon-fry, salmon smelts, parrs, samlets, sampsons, brandlings, fingerings or fingerlings, gravlings, gravel last-springs, last-springs, chedders, skirlings, &c. &c.

3574. *It would be expected that, from the great fecundity of the salmon*, an immense mass of young would be found; and so there are, varying in appearance from a day old to the age of twelve months. That all the above little fish, so variously named, are the young of salmon, Mr. Shaw, of Drumlanrig, and Mr. Young, of Invershin, have satisfactorily proved in the judgment of observant naturalists. There existed a difference of opinion between Mr. Shaw and Mr. Young, the former calling young salmon with the transverse bars and pink spots along the lateral line "parrs," and Mr. Young naming them "salmon-fry;" the former maintaining that young salmon did not become smolts, or assume their silvery migratory coat, until they had attained the age of *two years*; the latter insisting that they did at the age of *one year*. We agree with Mr. Young, and believe that Mr. Shaw has acknowledged that he was in error, and that Mr. Young is right. For the better understanding of their opinions, we refer the reader to *Experimental Observations on the Growth of Salmon-Fry*, by Mr. Shaw, published by Black, Edinburgh; and to *The Book of the Salmon*, by Ephemeræ and Mr. Young, published by Longman and Co. In *A Handbook of Angling*, written by Ephemeræ, that author gives the following summary of Mr. Shaw's theory:—"I shall, before I enter into detail, give, in a very few words, the salient points of the salmon's natural history, according to Mr. John Shaw, of Drumlanrig. The female salmon, viz. the fish with what is commonly called the 'hard roe,' deposits its eggs, spawn, or ova, in gravel beds, in the autumn and winter months. Simultaneously with deposition, the ova are impregnated by the spawn (the milt) of the male fish, or 'soft roe,' being exuded over them. That is the active process of procreation. The deposited eggs or ova are hatched, on an average, in from ninety to one hundred and forty days; duration of time depending on the temperature of the water. The warmer the water, the more rapid is the work of incubation. In a few days after the expulsion from the ova, the incubated matter assumes the fish shape. This embryo salmon at first grows slowly, and remains for the first year the diminutive parr or fingerling. On completing its second year, it changes its coat, and indeed its shape. The parr or samlet marks and spots disappear, and it becomes the silver-grey smolt, salmon fry, or last-spring. Its second year or thereabouts being completed, it migrates for the first time to the sea, and in two or three months or more returns to its parent river a grilse, having increased from one to two pounds every month it has tarried in sea water. About the end of its third year (I am speaking of the female fish, for the puerile parr will breed, *horresco referens*, with its great grand-dam,) it breeds, and soon after migrates for the second time to the sea. A sojourn there of a few weeks changes its name, size, and shape, and immigrating again to its native streams it becomes a salmon. To deserve that name, it must have spawned once, and been twice to sea. Afterwards, as long as it lives, it visits the sea annually, and annually revisits the streams of its birth, in which it gives birth to thousands of its tribe. Become an adult, the longer it remains at sea the more rapid its growth. In fresh water, it no longer grows, and seems to seek the pure fresh element, chiefly for the purpose of propagating its species. I have now, in a very few lines, traced the grand outlines of salmon life."

3575. *There are some errors in the above paragraph*, in the opinion of Mr. Young. He thinks it erroneous to call the young of salmon at any stage "parrs," for he maintains that the parr is a distinct fish, found in rivulets to which salmon can have no access. He also says it is erroneous to state that salmon-fry do not become "smolts" until they are two years old, or that they do not migrate to the sea before that age. He maintains they do at the age of twelve months. 'Tis an error, Mr. Young asserts, to state that a young male parr will fecundate the ova of a female salmon. He proves it to be a physical impossibility

on account of the minute quantity of milt in the male parr or salmon-fry, and the very large number, thousands of ova, of the female salmon.

3576. *Of the parr, or samlet*, or as it is termed the fingerin, Sir Humphry Davy appears to form an opinion, that it is produced between the sea trout and river trout; and he instances in proof of it, that in a small river in Ireland he took a great number of small sea trout of half a pound in weight, which were all males; and unless it be supposed that the females were in the river likewise and would not take the fly, these fish, in which the spermatie system was fully developed, could only have impregnated the ova of the common river trout. The sea trout and river trout are indeed so like each other in character, that such a mixture seems exceedingly probable; but I know no reason why such mules should always continue small, except that it may be a mark of imperfection. The author of the celebrated critique on *Salmonia* which graced the pages of the *Quarterly Review* for October, 1828, observes, "One of the most experienced and scientific anglers of our acquaintance entertains this opinion of the identity between the parr and the smolt of the salmon, from having observed that when the silvery scales are rubbed off the sides of the smolt, they exhibit the blue or olive bluish marks (see *Salmonia*, p. 68.), which are considered as distinguishing the parr. The same curious observer of Nature has also remarked, that the lens of the parr's eye is arranged in the same manner with that of the salmon, and totally different from the lens of the Lochleven trout, herring, sperling, and so forth." The remarks of Sir Humphry Davy are incorrect, mere surmises from imperfect observation. Those of the reviewer are nearly accurate. If he had used the term "salmon-fry" instead of "parr," his observations would be true.

3577. *The growth of salmon-fry*, calculated according to Mr. Young's experiments, as narrated in the *Book of the Salmon*, is as follows:—"The ova having been hatched, the embryo salmon pierces the sandy and gravelly crust of its nest, and almost *instantly* assumes a shape somewhat like a fringed larva of about three quarters of an inch in length, and tapering from head to tail. At a month old the fish-fœtus has grown in length, and exhibits to the naked eye plain traces of head, eyes, and fins. Still it is barely more than a pale, misshapen, little longitudinal, half-animated substance. At two months old the 'fry' measures about one inch and a half, is of nearly perfect piscine formation, having all its fins well defined, and on its coat a slight appearance of bars, commonly and erroneously termed 'parr marks.' In speaking of the young of salmon I shall invariably use the word 'fry,' until they have attained the age of twelve months, when I shall call them 'smolts.' That is the correct nomenclature. At from three to four months a salmon fry measures in length from two to two and a half inches, hardly so much. Its head is round; there are pink spots on the body, and the transverse bars are plainly apparent. At six months the young fish measures from three and a quarter to three and a half inches in length, and the pink spots and transverse bars continue to become more and more distinct. At eight months the fry is very little longer than it is at six months of age, but it is evidently thicker or more bulky. At nine months even, the increase of growth does not tally with increase of age. A salmon fry at ten months measures about four inches, and the transverse bars begin to disappear, silvery smolt scales by degrees taking their place. At eleven months its length is four and a half inches, and the bright silvery scales are now seen descending towards the region of the belly. A salmon fry at twelve months is called a 'smolt.' It is the 'last-spring' of the Severn and its tributaries, and has many local names."

3578. *Rapid growth of salmon after attaining the smolt stage*. "The reader," (we are quoting the work last mentioned,) "must have already remarked the very slow growth of salmon-fry. At the end of a year, the whole of it passed in fresh water, the young fish, on an average, weighs little more than four ounces. At that weight, being a smolt, it descends to the sea; and if it should remain therein, say for eight or nine weeks, which is about the average time, and then return to its natural element, fresh water, it will in all probability, and no specific circumstances preventing, have increased by the end of that time to the weight of five pounds or more. So, if the growth of salmon during the first year of their existence is extremely tardy in fresh water, it is, after that age, more than proportionably rapid in salt-water. It will be well to bear in mind that the growth of salmon is not always proportioned to the length of time they sojourn at sea. Several circumstances affect their rate of physical development. Amongst others, indeed they are the chief ones, quality and quantity of food found in the salt-water feeding grounds, and hereditary capacity for growth. By 'hereditary capacity,' I mean that the offspring of large fish have the inherent power of growing, and do grow, to a larger size than the young of small salmon. When I speak of large and small salmon, I refer to fish which eventually become very large, and to fish which, no matter what their age, will always be small; in fact, to giant and dwarf breeds. The growth of salmon-fry is pretty equal in all rivers; and, therefore, smolts, no matter whether they are the produce of large or small salmon, will be found in different rivers, not differing much in size. Such is not the case, however, after the smolt stage of existence. After that, the growth of the offspring of large growing salmon is much more rapid than that of the produce of salmon of more diminutive race."

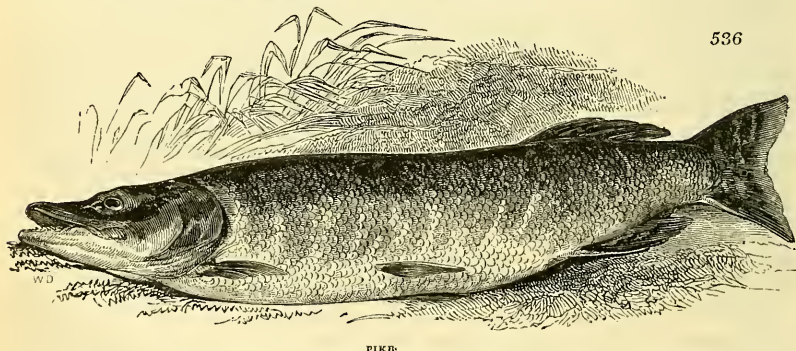
SUBJECT. 6. *Angling for the several Varieties of Salmon.*

3579. *As the angler's practice in regard to the larger varieties differs little, if at all, from what has been laid down for the capture of the salmon himself; we need not dwell on their individual anglings here, but reserve any particular remarks for our treatise on fly-fishing, and our localities of fishing.* It may be observed, however, that it is an opinion that the grey is not often taken with a bait; but that the bull trout and salmon trout will take both worms and fish baits by trolling. We have ourselves often caught these fish in the rivers of the northern counties by both these methods when fishing for salmon; and what we captured were sometimes called by one name and sometimes by another, as bull trout, salmon trout, &c.; nor do we recollect that any difference existed between them, either in the bait, or the method of ensnaring them with it. It is very much the same in angling for the small fry, we have ourselves noticed, or those treated of by other anglers, as they will all take indiscriminately worm, gentle, and fly. When they have reached beyond seven or eight inches in length, they may be observed chasing the minnow also; but we never knew them attempted this way by the angler. In the northern counties they are principally caught by the fly, and in the Thames and Lea, where they are found about the end of May and until July, they are taken in the same manner. They are also captured in these rivers, and indeed in others where there are considerable deeps without many accompanying sharps, by means of bloodworms or red worms on a very fine hook, as No. 9, 10, or 11. About Bromley the angler used to meet with excellent sport in fishing for them with a paternoster line; but the quantity now found is not worth the trouble of seeking for them; and although they are still to be met with in the Thames, it is in very reduced numbers. With a worm they must not be fished for here until the 1st of June, but a gentle may be used at the top of the water, by whipping, at all times; put one at a time on a No. 9 or 10. hook. The method of whipping with flies will be noticed with both natural and artificial fly-fishing. When fishing with worms or gentles at the bottom, use a float and these hooks, one about six inches from the ground, another about a foot, and a third at mid-water. In the Wye we have taken several dozen in an hour in this way, and in some of the pools of the Coquet, when the water was too high and too coloured for the fly, we have done the same; but the fly and the gentle at top, or gentle and fly together, is the liveliest practice and takes the largest fish among them, as will be noticed hereafter.

3580. *The edible qualities of all these varieties are well known, and the culinary preparation of them also is too well known to need any observations thereon.* The usual value of all the varieties is in the ratio of their colour; indeed, it is almost a general rule, that where the flesh of any of the genus *Salmo* is white, it is usually insipid. The little gentry we have just taken leave of, we have dined on many times with the keenest relish; and we have eaten them both fried and boiled. Baked in a warm pickle, they make a most excellent summer dish. Brother angler, harkee! Hang up a few of the largest to dry after salting them, and broil them for your breakfast — *verbum sat*.

SECT. XIX. *The Pike and Jack (Esox Lucius).*

3581. *Greyish olive pike (fig. 536.), with yellow spots and depressed sub-equal jaws. (Shaw.) E. rostro depresso subæquali. (Linn Syst. Nat. p. 516.)*



536

PIKE.

3582. *E. Lucius.* Gen. char.; body, olive above, with yellow spots; beneath white, with black spots. Spec. char.: body of nearly an equal thickness, suddenly decreasing behind the dorsal and anal fins; D. 21.; P. 15.; V. 2.; A. 16. (*Fleming's Brit. Anim. p. 184.*)

3583. *Pike and jack*, it is well known, are mere verbal distinctions as regards size and age. When the fish does not exceed 4 lbs. or 5 lbs. in weight it is called in England "a jack," and

above that weight "a pike." The indigenous character of this fish has been disputed, although, according to some of our best naturalists, there is abundant proof that it has always been a native of our waters. That the pike was found in England before the period usually named for its introduction (*i. e.* the reign of Henry VIII.), we have decisive proof, as it made a part of the entertainment in the great enthronisation feast of Archbishop Nevil, in 1466. But whenever it first became known in England, it has from the earliest records extant been common in the lakes of Europe, particularly in those of Lapland, where, according to Schœffer, pike are sometimes found eight feet long, and are there taken in such abundance, that they form an object of commerce, and as such are dried and exported.

3584. *Dr. Shaw describes the pike* as having "a very flat head; the upper jaw broad, and shorter than the lower, which turns up a little at the end, and is marked with minute punctures; the teeth are very sharp, disposed in the upper jaw only in front, but in both sides of the lower, as well as in the roof of the mouth, and often on the tongue; the number, according to Bloch, is not less than seven hundred, without reckoning the farthest of all or those nearest the throat; it is also to be observed, that those which are situated on the jaws are alternately fixed and movable; the gape is very wide, and the eyes small; the dorsal fin is placed very low on the back, and consists of twenty-one rays, the pectoral of fifteen, the ventral of eleven, and the anal of eighteen; the tail is slightly forked, or rather lunated. The usual colour of this fish is a pale olive grey, deepest on the back, and marked on the sides by several yellowish spots or patches; the abdomen is white, slightly spotted with black: when in its highest perfection, however, the colours are frequently more brilliant, the sides being of a bright olive with yellow spots, the back dark green, and the belly silvery. Dr. Bloch assures us, that in Holland the pike is sometimes found of an orange colour, marked with black spots; the scales are rather small, hard, and of an oblong shape." The internal conformation of the pike presents few specialities. A pale flesh coloured liver, with its gall bladder united to it at its upper part, whose long duct enters the alimentary canal obliquely, first strikes the eye. The spleen is dark and triangular, and the heart is somewhat of a similar figure; the intestinal canal makes three turns, and is imbedded in fat; the stomach is strong, and composed of membranous folds, by which it is capable of great dilatation, in strict accordance with its voracious aptitudes.

3585. *The size of the English pike* is in some instances very great. "In 1797, one weighing near forty pounds, and measuring in length three feet six, and in girth two feet, was caught in a pond at Totteridge in Hertfordshire; a tench of four pounds, and four pounds and a half of solid fat, were taken from his inside. In Munden Hall Fleet (already mentioned for its remarkable tench), a pike was found that had been killed by a long frost; in its putrid state it weighed forty-two pounds, but had wasted considerably; was three feet six long, and two feet nine inches in girth; the teeth were nearly as long, though not so stout, as those of a greyhound." Dr. Grierson mentions one taken in Loch Ken in Galloway, which weighed sixty-one pounds. (*Thomson's Annals of Philosophy*, vol. iii. p. 248.) It is said that in the Irish lakes pike have more than once been taken exceeding seventy pounds' weight. Major Bingham relates, that when on a visit to the late Marquis of Clanricarde at Portunna Castle, a pike taken from the Shannon was brought there by two gentlemen, which when weighed somewhat exceeded ninety-two pounds. One of seventy-two pounds, whose head is yet to be seen at Kenmore Castle, and which had been taken with a fly, weighed seventy-two pounds. We are disposed to think these Leviathans might be more often taken with very full bodied flies dressed to represent those birds, as swallows, &c., which skim over the water in search of flies. We have frequently seen these darted at in heavy broods both by large trout and pike. We took a jack on Boxmore with a fly, which it had seized with great voracity.

3586. *The voracity of the pike is notorious*, and has given rise to some wonderful stories; one of which, related by Walton, partakes of the marvellous; nevertheless, there are well authenticated accounts which satisfy us with regard to the vastness of its appetite. Mr. Pennant observes that he himself has known one that was choked in attempting to swallow one of its own species which proved too large a morsel. It will also devour water rats and young ducks, which happen to be swimming near it. In a manuscript note to a copy of Plott's *History of Staffordshire*, and which Mr. Pennant afterwards found was inserted, on good authority, by a Mr. Plott of Oxford, the following highly singular anecdote is recorded:—"At Lord Gower's canal at Trencham, a pike seized the head of a swan as she was feeding under water, and gorged so much of it as killed them both; the servants, perceiving the swan with its head under water for a longer time than usual, took boat, and found both swan and pike dead." "In 1801, a hook baited with a roach was set in the manor pond at Toddington, Bedfordshire; the next morning a large pike was caught, which with difficulty was got out. It appeared that a pike of three and a half pounds' weight was first caught, which was afterwards swallowed by another, weighing thirteen pounds and a half, and both were taken." As elsewhere noticed, a pike of Lord Cholmondeley's, which had been put into a canal full of fish, in twelve months time had devoured them all, with their progeny, except a single carp, whose weight (between nine and ten pounds) had saved him from entire demolition, though his scars showed that he also had been attempted. From the size of the fish which have occasionally been taken from within them, there appears to be hardly any limit to their voracity. One caught in the Isis was found to contain a barbel of six pounds, and a chub of more than three: these nine pounds of food formed nearly a third of his own proper bulk, which was thirty-one pounds and a half. The circumstance of two fish of such dimensions being within the animal at one time, is a proof that the calls of appetite in this tribe are of a peculiar kind; they are most imperative, but not incessant. The desire to fill the stomach is such that no offal is refused; animal substances of every kind, living and dead, are equally well received, and sometimes other matter; for the plummet of the angler, the clay and bran balls for groundbaiting, when he is in one of his gormandising moods, are not refused, of which many instances have occurred; and it is at such times that he dashes at large flies on the water, prompted to it probably by his habits of receiving there many savoury morsels, in the shape of rats, mice, and frogs, as well as the young of ducks, geese, swans, and other aquatic birds, which he is known to prey on as readily as on fish.

3587. *The notorious voracity of pike* is exemplified by their devouring their own progeny with as little reluctance as any other; and it is not at all unusual to find the young fry within them, from the size of an inch and a half and upwards. It is related also of this tyrant, that he has been seen contending with the otter for his prey: he has been known to dash at the noses of cattle while drinking, as well as at the hands of persons lading water from rivers and ponds; and these relations there is no reason to doubt. We might indeed, *a priori*, suspect him of extreme rapacity by his conformation: his jaws, loosely connected, present a structural peculiarity which greatly favours his capacity of receiving animals whose ratio of bulk it would appear impossible otherwise to take in; and the dilatability of his throat and stomach is no less remarkable. The digestive powers of the pike are also peculiar; and it has been affirmed in proof of them, that after in part swallowing a fish of a size but little inferior to its own, those parts that have entered into the stomach are dissolved with amazing rapidity; while those in the mouth and throat, which are yet entire, make a constant progress downwards, as the process of digestion makes way for them. Hence a fish which is too large to be swallowed entire, appears for a while with its tail hanging from the mouth of the pike; but soon after totally disappears, and is dissolved by the stomach almost as quickly as it enters it. We are not prepared to deny such a power altogether, because we know that many other animals can thus partially swallow their prey, and digest only the portion in the stomach; but in general these are animals which do not respire through the medium of gills. In fish, unless sufficient room be left within the mouth for its action to inhale the water, and pass it through the gill fringes with freedom, strangulation must take place: we therefore conceive only such a bait could be thus partially swallowed as would not obstruct the action of the mouth and gills. Indeed, there are not wanting instances in which both pike and jack have been effectually choked by too large a bait.

3588. *The abstinence of the pike and jack* is no less singular than their voracity; during the summer months their digestive functions are somewhat torpid, which appears a remarkable peculiarity in their animal economy, since it must be in an inverse ratio to the wants of the fish, which are at this time in a state of emaciation from the effects of spawning; and the circumstance is fortunate, for were the appetite as usual, few young fry could escape: but during the summer they are listless, and affect the surface of the water, where in warm sunny weather they seem to bask in a sleepy state for hours together; and at these times they frequently get snared by the wire loop of the poacher. It is not a little remarkable also, that smaller fish appear to be aware when this abstinent state of their foe is on him; for they which at other times are evidently impressed with an instinctive dread of his presence, are now seen swimming around him with total unconcern. At these periods no baits, however tempting, can allure him; but on the contrary he retreats from every thing of the kind. Windy weather is alone capable of exciting the dormant powers; and thus, if a cool sharp breeze springs up, he may be sometimes tempted to *run*; but even then he will rather play with the bait, and may be seen even sailing about with it across his mouth; after doing which he commonly ejects it. This inaptitude to receive food with the usual keenness, continues from the time the pike spawn until the time of their recovery from the effects of it; and thus pike and jack fishing is not often productive of much sport between March and October, unless an occasional breeze should blow a hungry fit on them: and it is thus also, that when they are attempted between these periods, the experienced fisher often at once commences his practice by snap-tackle. We are disposed to think that the decrease in the voracity of these fish during the heats of summer is in some measure likewise influenced by the increase of temperature. This animal thrives best in frigid climes, and the further we proceed north, within certain limits, the larger is his growth: thus in the Canadian lakes he exists in vast numbers, and grows to the length of four and five feet: and he does the same in the cold waters of Lapland also, disappearing, according to Wahlenburg, in geographical distribution with the spruce fir. It is no wonder, therefore, that only a slight approximation to the equator should unnerve his powers, particularly during the summer heats.

3589. *Jack and pike spawn either in March or April*, according to the forwardness of the spring or temperature of the atmosphere, as well as the situation of the water. They retire for the reproductive purpose in pairs, quitting the rivers for the creeks and ditches. When confined in still waters, they seek the stillest parts of them, and frequently occupy a weed-bed, or remain towards the edges or shallows, depositing their spawn among aquatic plants, of which the reed and rush variety are favourites. The male may be seen during this time accompanying the female with much attention, and when the fecundating milt has been deposited over the ova, the pair retire into deeper water, and seem to feel no further solicitude for the result of the process.

3590. *The usual haunts of pike and jack* are in still, shady, and unfrequented waters, having a sandy, clayey, or chalky bottom, they being observed to arrive at a larger size in pools than in rivers. From May to the beginning of October they usually place themselves amongst or near flags, bulrushes, and water docks, and particularly when the plant is in flower, under the *Ranunculus aquatilis*. They are seldom found where the stream is rapid; but a retreat in the vicinity of a whirlpool or sharp bend is a favourite hold for them.

From March to the end of May they resort to back waters, that have direct communication with the main stream. As winter approaches, they retire into the deeps, under clay banks, or where bushes impend over the water, and where stumps and roots of trees offer them a strong hold.

3591. *The localities likely to furnish the professed pike fisher with sport, are numerous and widely distributed.* Most of the lakes of Ireland contain pike in abundance. Those of England and Scotland, particularly the former, are also well stored with them. The rivers of our own country are too well known to need much notice in this respect, pike being found in almost all of them without exception. Pike, however, are not so plentiful, and are seldom met with in any but deep and sluggish streams, of which some of the midland counties have no lack, Dagenham Breach, for instance; the waters of Lord Melbourne at Brocket Hall; of the Marquis of Salisbury, in Hatfield Park; or of the Duke of Marlborough, at Blenheim. Both pike and jack, but particularly the latter, appear disposed, in some localities, to migration. They quit their winter quarters, and congregating, they seek a new location, probably impelled by want. The Rev. R. Sheppard observes that a migration of this kind among pike and jack takes place yearly in the spring, in the Cam, up which river they come in shoals, as is supposed from the fens in the neighbourhood of Ely, where they are bred. This necessity for migration to situations favourable for their increase can hardly excite surprise, when we are informed that one hundred and forty-eight thousand ova have been taken from a single pike of the Rhine. The young fry, it is said, grow very rapidly, and attain to two pounds in weight the first year; they are also thought to gain a pound (some accounts say two or three) every subsequent year, which is by no means impossible, until they have reached a certain bulk, when their further increase is probably slow; for if their longevity be as great as is stated by some naturalists, provided that they increased the whole time in the same degree, we should have them rival the northern kraken. What the natural term of their lives is we know not; but we do know, by authentic records, that individual fish have been familiar to persons forty or fifty years. Their majority should be computed from the time they change the diminutive title of jack for that of pike, which is stated to take place when they have attained a linear measurement of twenty-two inches, or to a bulk equal to three pounds; but it is more common among Thames anglers to call all, of whatever dimensions, *Jack*.

SUBJECT. 1. *Angling for Pike and Jack.*

3592. *Having given the history and haunts of the pike*, it now remains to detail the numerous methods employed in his capture, some of which are sportsmanlike, many others are unsportsmanlike, and some there are which may be considered as between both, being principally practised either by the greedy, the needy, or the pot-fisher. The true sporting practices of the angler are often comprehensively called *trolling*, but doubtless erroneously; for some of them are by no means of the troll or rolling nature, but, on the contrary, partake of the leger or stationary character. The most experienced anglers acknowledge three methods of pike and jack angling:—First, *live bait fishing*, which is practised with line and float usually; sometimes the float is dispensed with when sinking and roving are pursued, by which either the roving pike falls in the way of the suspended bait, or the bait is presented to him. Second, *snap-fishing*, which is a plan devised to prevent the disappointments incident to the angler while trying for these fish, when they are not eager for what he has to present to them, or, in other words, when from want of condition the stomach is not in a state of digesting capacity, but when from its morbid state the pike is led to seize a bait without proceeding to gorge or swallow it. To prevent his rejection of it, however, when once laid hold of, the wary angler, by a sudden spring or *snap*, fixes his hook instantly into some part of his mouth, when depending on the strength of the tackle, he is not of necessity played at all, but, on the contrary, is at once landed by main force. This latter method may be pursued with either a live or a dead bait. Third, *trolling*, which is employed with dead baits alone, and usually on what is termed a gorge-hook. One of these being taken by the fish, he is allowed to pouch it at his leisure before he is struck. Some advocate one of these methods and some another, but no one can be said to deserve the name of a perfect jack-fisher who is not master of all of them, as there are times when each is found peculiarly appropriate, and when, in fact, neither of the others would be likely to command success. Trolling with a gorge-hook, every experienced angler knows, is, under some circumstances, labour thrown away; but change the practice to snap-angling, and success attends the efforts. Again, in still shallow waters, where the jack are small, and where there is but little cover to hide either the angler or his artifices, a long rod with fine tackle, and a lively bait floated at about mid-water, will attract fish which would have retreated from either the trolling or the snap bait.

3593. *Pike and jack angling* is a very fascinating sport altogether. That branch of it called trolling is particularly so, and is pursued by some anglers with astonishing avidity, to the almost total exclusion of every other branch of the art. Trolling owes much of its charm to the circumstance, that it keeps the practitioner in constant exercise: something is also due to it on the score of the masculine character, likewise, which it acquires from the size

and determination of the prey, and the little compunction that is felt at capturing so merciless a destroyer. Nor is it a slight circumstance in its favour, that it can be practised to most advantage when there is a comparative dearth of other angling. The celebrated troller, Robert Nobbs, M.A. appears to have been fully alive to all the fascinations of this sport, when he says, that "if it be quick, scarcely any thing can vex or discompose the fisher; for he is then so attentive on his pleasure, that he takes little notice of those inconveniences which otherwise might be trouble and vexation: he then regards neither wind nor weather, and disdains those slight perturbations of cold, thirst, or hunger: he bath then gotten the philosopher's stone, which sweetens all his other crosses, and turns all disasters into gold. His sport is a cordial for all his distempers, and the pike (like a good water physician) cures him of all his diseases. If weary, his sport refreshes him; if cold, it warms him; if melancholy, it cheers him; if drowsy, it revives him; if in pain, it eases him; if sick, it recovers him: he then feels not the weight of his rod, nor is concerned that his tackling is no better."

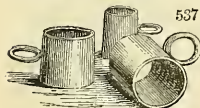
3594. *The tackle used in pike fishing* is by no means the same with that employed for other ground or mid-water angling, and it therefore requires some distinct notice. In the chapter on fishing-tackle it was stated, that trolling rods would be separately described, when the methods of taking pike and jack came under consideration, as there were some peculiarities in their construction, which could be best explained with the practices for which they were particularly designed, and which pledge we will now attempt to redeem. Mr. Nobbs, with more truth than good taste, has observed, that if your hook and line be good you may make shift with an indifferent rod; and he seems to ridicule "those precise craftsmen who spend their time in admiring their instruments;" for he adds that he has "often put a ring on his walking-stick, and with his line thus mounted has killed his pike;" and no one doubts him. We also have heard a boy discourse sweet music on a Jew's harp; and yet, some how, Jews' harps have not superseded the use of the violin, which is "passing strange!" We shall not, however, have much difficulty in persuading the true angler that an appropriate rod will not only add to the success of his practice, but will render that practice more convenient and agreeable likewise. It will certainly be more professionally characteristic. In the rod or rods used for jack fishing, the method to be employed, the nature of the water, and the probable size of the fish, are all matters necessary to be taken into the account. In live bait fishing, and in trolling, a rod of nearly similar strength and dimensions is required; but in snap-fishing one with greater strength but diminished length is generally employed. In a very wide water considerable length of rod is necessary, for the purpose of reaching the probable haunts of the fish, and making a cast over the reeds or sedges which frequently skirt the banks and edges of some waters. Without a rod of considerable length, the bait often falls short, and not only misses its object, but gets torn by falling within, instead of without, the reeds; and an opening between weed-beds (so likely a situation for jack) either in rivers or lakes, can seldom be reached without a lengthy rod. The probable size of the fish is to be taken into consideration when selecting our pike or jack rod. In the lochs of Scotland, such as Loch Alva, for instance, where Colonel Thornton tells us that he killed a pike wanting two ounces of fifty pounds' weight, one should not be inclined to use a rod either of bamboo or cane. Neither would it be wise to encumber oneself with a four jointed solid wood rod of twenty feet in length, and five or six pounds in weight, for trolling in the Lea or the Thames. There are some luxurious anglers, however, who must have every thing that can be possibly conducive to their sport; for such we really cannot limit the number of their pike fishing rods; but we do think, that with two for trolling, and one for snap-fishing, every angler may accomplish all that is usually required. There are many good artists, who by means of spare tops, &c. make a shift with one only, and some have versatility of talent enough by the help of a change of joints, to make this one act for several methods, as at snap and for trolling also; and in clever hands such an one may do the work of all tolerably well too. A proper rod, however, for the intended sport, not only adds to the pleasure of the practice, but likewise to its success. Notwithstanding all which, it must be conceded, that in pike and jack fishing it is more the address of the angler than the merits of his rod, that is essentially requisite to his sport.

3595. *The rod for live bait fishing* and that for trolling we may, with propriety, describe together; and with the advantage of a spare top or two, one rod may be readily made to answer both purposes. The general rod of the best makers may be also employed for either of these methods, where trolling is not the settled purpose of a journey, or the usual pursuit of the angler. If such be the case, we would recommend him to a rod of the following description. We may however premise, that the angler who is but partially initiated in any particular angling, may almost always be suited to his mind and purpose by application to any tackle-maker who is known himself to be a proficient in that variety of the sport. By describing his wants, and the nature of the waters where he is likely to fish, he may be furnished in the best manner; and we do hope that our directions will be sufficiently clear to enable him to judge whether he be properly served or not. The rod,

or rods, for both live bait fishing and trolling in the rivers of the southern parts of the kingdom, may be made throughout of bamboo; but a rod so made must be composed of the very best possible materials; in which case, in good hands, it will be fully equal to land any pike that does not exceed eight or ten pounds in weight. But where pike may probably be met with of heavier weights, the butt and top at least should be made of some solid wood; the former may be of willow for lightness, and the latter of any tough wood, hickory or lance wood, at the discretion of the maker, surmounted with one-third of whalebone.

3596. *For the lochs of Scotland*, the lakes and meres of English counties, and other waters known to contain pike from fifteen to twenty pounds or more in weight, the rod must be wholly formed of solid wood. But even here we recommend that the butt be bored, both to lighten it, and also to contain one or two spare tops, which it may very well do without weakening it. Every trolling rod should be fitted up with at least one spare top, but it may with still more propriety have two. One should be made shorter and stronger than the other, to vary the fishing according to circumstances, and likewise to enable the angler, at a distance from his stores, to have recourse to snap-fishing, if he find the jack dainty: this purpose may, however, be still more effectually answered by a second top made wholly of whalebone, and less than half the length of the other. When the angling mania has possession of a traveller, as it had of ourselves, it is of much importance that one article should be capable of being converted to many purposes. With such a rod as we have just described, he may troll in every water in the kingdom; nay, he may extend his fishings to the enormous pike of the Canadian lake, mailed over with rhomboidal scales, and not be afraid of coping with the largest fish. Captain Williamson says that the spare top of an ordinary bottom rod, which is occasionally employed for jack trolling, should be firm and not too pliant, so that it will bear a weight of four pounds hung to the hook without breaking. Mr. Salter, on this head, says, "I have two tops to my trolling rod, which I always carry with me, in case of breaking one, &c.: one is made very flexible with wood, and a whalebone tip about two feet long; to this, for strength and security, I have a ring on the wood part, as well as the large one at the whalebone tip: this top I always use when trolling with the gorge-bait, or when fishing with live bait; the other top is made wholly of stout whalebone, about one foot long: this I use only when snap-fishing, for which it is well adapted by its superior strength and stiffness." The length of the rod for live bait fishing and trolling may vary from fifteen to seventeen feet, according to circumstances; if its wood and workmanship can be depended upon, sixteen feet is in no case too much; and where extensive waters are fished over, one of seventeen or eighteen feet is convenient.

3597. *The ringing of trolling rods*, be it particularly observed, constitutes one of the principal peculiarities which distinguishes them from other rods, as will be evident when we consider that a free transit to the line is very important in pike fishing, both from the power of the fish, and the constant injury to the line without such freedom of motion. We shall, therefore, stand excused, if we be somewhat particular on this point. It is, under this view, necessary that the rings be strong and wide in circumference, and also that there be but few of them. Instead, therefore, of rings graduated from two feet to three or four inches distance from each other as they proceed, as in other rods, the longest trolling rod will require not more than five rings, and a shorter will be sufficiently furnished with four. Those, be it observed, are exclusive of the ring at the extremity of the top, which should be finished with a solid brass piece firmly fastened to the rod by a ferrule or screw, its opening being at a right angle with the line of the rod. Observe, likewise, that this top ring be broad enough, and that it have a surface slightly rounded, to allow the line to run freely over it. However, to prevent the possibility of the trolling line entangling itself around the movable rings of the rod, which is liable to happen when both fisher and fish are engaged in active exertion; instead, at that moment, of experiencing the perplexities resulting from loose rings whipped to the rod by a flattened piece of quill, or brass, or tin plate, after the usual method of ringing rods; instead of this, we repeat, let the professed trolling rod have a few solid rings



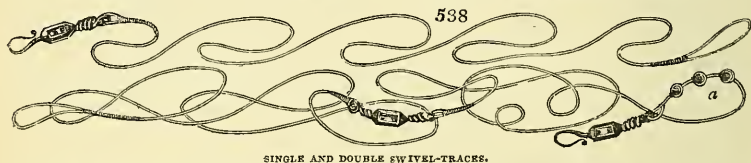
ROD RINGS.

only, as seen in *fig. 537.*, attached to it, which will effectually prevent any entanglings. Such may be made to slip on or off at pleasure; but the practice of playing and landing the fish will be better done when the loops are fixtures, but set, as we have directed, wide apart. It is true that this renders a rod much less convenient for close stowage; but the critical angler will probably disregard this for the benefit of the free run afforded to the line, and the surety that no entanglement can mar his chance of landing his fish; when, however, this immobility of the rings interferes with the safety of the rod, or, by preventing its being conveniently packed, becomes very troublesome, the inconvenience may be obviated; while the benefits may be retained by having a metal ferrule adapted to each joint, with a fixed ring to slip on and off. A more humble substitute may be also formed from strong small curtain rings sewed to leather loops, which may be likewise passed over the joints of the rod before they are put together. The top loop may also be made to screw on and off, if necessary, to assist in close stowage.

A line reel is altogether left out by some pike and jack fishers, as we shall have occasion to observe; but a *running line* can never be dispensed with except it be at snap-angling, and there also it cannot be omitted without risk and disadvantage.

3598. *Trolling lines* are of various manufacture, as platted silk, Indian twisted silk, silk and hair, &c. &c.: but the platted silk line is, in every respect, the best. We have trolled with one of a light green colour, and thirty-five yards long, for some years, and it is now neither frayed nor rotten. When twisted lines are used, they should be such as are mixed with mohair; but all twisted lines of whatever manufacture are more apt to kink than others. In lochs, meres, and all extensive waters, it is necessary to make use of a line of fifty or sixty yards in length, and of a proportionate strength, as it must be remembered that the capability of resistance in the line is always in an inverse ratio to its length when extended. Mr. Salter recommends making the platted silk line waterproof by soaking it in linseed oil from which, after a few minutes' soaking, it should be pressed out and hung in the air to dry. The benefits derived are, that the oil, by drying, prevents the partial contraction of the fibres of the silk; neither does it, when it becomes wet, stick to the rod so closely, and altogether it runs through the rings with greater freedom. It is well to remember that the reel used for these occasions should be without a stop; it ought, likewise, to be large enough to hold a sufficient quantity of line with ease: the method of its application to the rod has elsewhere been fully considered. Of hooks, we would recommend that the angler have a variety, of different sizes and strength: few fishings vary more than this. It is also necessary to observe, that the temper of such as are bought be good; double hooks like eel-hooks are employed for the gorge, but they are commonly ready fitted up. There are, likewise, other double hooks, not of the eel kind, which often occur in our descriptions, and are also to be bought at the fishing-tackle shops: of such, those are best which are formed out of one piece of wire, because they are not likely to unsolder, and also because they present a loop for the gimp, gut, or swivel-hook to be attached. Double eel-hooks (*fig. 486, p. 977.*) without lead are often employed for live bait and snap-fishing: such are very strong, and are made with different angles of inclination. These are found the best for applying to the surface of the belly, as in the snap-baits, where their angle receives the ridge of both the back and the belly advantageously. The usual double fish-hook is formed as two common hooks would be, joined together back to back on one plane, the uniting wires forming a loop. These are well adapted for such snap-baits as have the skin penetrated at the sides, and in them it is necessary that the points, bends, and general plane of the hooks be flat. When either of these cannot be at hand, it is only to unite two single hooks of the kind by firm whipping, and the end is answered sometimes better than by the ready-made ones, as the angle of inclination of the points and bends can be made to suit the intention of the employer.

3599. *Swivel-traces* are essential requisites in pike angling of most kinds. There is a single and a double swivel-trace (*fig. 538.*). The single is thus made: to about ten or



twelve inches of gimp add a hook-swivel at one end, and loop it at the other; the hook of the swivel will receive the loop also of the gimp hook, and the gut loop will receive the reel line by a draw-bow knot, which it will be prudent occasionally to examine, when the reel line used is one either of hair or of silk and hair, as such knots made in them sometimes loosen, but in the platted silk line this never happens. It will be necessary to add either three or four swan-shots to the trace (*a*), or otherwise a dip-lead, either of which should be fixed just above the swivel. Note here, that it is necessary to add some weight to all the fish bait beyond their own; the intention of which is, that the increased resistance to the water made by this means occasions an increase in the velocity of their spinning by way of counteraction. Sometimes this leading is of the kind just shown, by swan-shot; at other times it is a dip-lead, which is tubular, and runs around the line, being retained in its situation frequently by a shot either above or below it, or both. At other times a *bead-lead* is used, which is either oblong, oval, or otherwise conical, and has usually two links of minute chain attached to it, by which it slides along the line. The bead-lead is used for inserting into the mouth of the bait, where it is retained by sewing up the mouth.

3600. *The double swivel-trace* (*fig. 538.*) is made by uniting two ten inch lengths of gimp by a box-swivel; to one end of this trace add another swivel of the hook kind, loop the remaining end, and finish by adding to the trace, by way of ballast, either swan-shot or a dip-lead. Note, that in the application of these traces it may be sometimes more convenient, instead of making a loop for receiving the hook loop, to whip the hook at once to the trace, and this may be more particularly proper where the water is shallow. On the subject of swivel-traces, Mr. Salter has an excellent practical remark, peculiarly applicable to all waters like those around our metropolis, as well as those of other cities and large towns, where the fish cannot be expected to arrive to any great size. He says, "In the summer months, when the waters get low and bright, from a continuance of dry weather, I have found, when I used traces made of the choicest twisted gut instead of gimp, and hooks also tied to twisted gut, that I have killed more jack and pike, either when trolling with the gorge, or when live bait fishing, than I could if I used gimp: this, you are to observe, is only during the summer, when jack and pike are not much on the feed, and the water is very bright—they then seem shy of coarse tackle; but not so in winter and spring, for they are then well on the feed, and the water is generally somewhat discoloured, at which times and seasons I believe jack and pike would take a baited hook if it was tied to

a clothes' line or rope." We proceed now to the varieties of pike fishing, first printing a card-list of necessities, for a help to the memory, agreeably to a previous notice:—

PIKE FISHING CARD.

Reel, or wheel, or thumb-winder; traces, swivel mounted; leaded gorge-hooks, various sizes, gimp or wire mounted; snap-hooks; hooks double, single, eel, common and barbel, plane and curved; spare gimp; gut; wax; waxed silk, thread, twine; thread lengths for tail tying; sewing needle for ditto; baiting needles; bead, dip, and tube-lead; nose-lead and coffin-lead; snap-tackle; live bait ditto, with float, or bottom-lead:

— ROD FOR THE OCCASION —

Knife, scissors, disgorging, drag-hook; landing hook; landing-net; live bait kettle, box, and spare lines; waxed strong twine, and rod splices; dead bait box; minnow-net, bank-runners, &c. according to circumstances and taste.

SECT. XX. *Live-bait Fishing for Pike and Jack.*

3601. *Worm-fishing for jack* is a species of live bait angling that we and others have occasionally practised with success, particularly where small jack are numerous in ditches and dikes, in marshes, &c. In our worm-fishings for jack we have found the brandling the most successful of all the varieties, and our practice has usually been to employ two at a time on a No. 3 or 4. hook: we however did not use the common wire hook, but the barbel or stronger kind, by which means the strength was increased, though the appearance was not rendered more formidable. And note, that this kind of hook may be prudently used in all the various methods to be detailed when single hooks of small size are required. Use a float correspondent to the nature of the water: and if that be moderately deep and at all ruffled, let the float be a small sized cork one; but when the surface is not disturbed, use a porcupine's quill, for the finer the tackle the greater the chance of success. Retire as far as possible from the banks, and strike tolerably quick, at least after the second tug is felt, by which time the jack has usually got the worm within the throat.

3602. *Live fish bait angling for pike and jack* is often confounded with live snap-angling, as if there were no distinction between them, but which there certainly is. We have often fished with live baits for jack in canals, ponds, fleets, and meres, when the fish by no means required to be taken at snap; on the contrary, two or three rods and lines might be managed by one person when placed at a distance from each other. Every fresh-water fish is devoured by jack and pike, with the exception of the tench; large perch also those gentry usually avoid, but that they will take them is known, for a perch has been found to choke a pike, and small ones are occasionally used with effect as jack baits. In the southern and midland counties, minnows, gudgeons, bleak, roach, dace, and chub, are the most common baits. In the northern parts of the kingdom they are likewise equally prized where they can be procured; where they cannot, the anglers make use of parrs, samlets, trout, eels, &c. &c. The minnow is sometimes employed as a live bait for jack fishing, but more frequently the gudgeon is made use of when a moderate sized bait is wanted; when a larger is required roach and dace are often chosen in the southern and south-western parts of England.

3603. *Of all these living fish baits* we have treated individually in the section of live baits, to which we refer the reader; we shall here, however, offer a few observations on them as particularly applicable to jack and pike fishing. The gudgeon is a killing live bait for jack; it is also very valuable in this fishing, as it will swim strong and live longer than most others, except the perch, and they are much on a par in this respect, but not so as to the estimation in which the pike or jack holds them; indeed, it is not often that either pike or jack take perch, as a live bait, though on the gorge it is taken readily. The gudgeon keeps low also in the water, whereas most other fish tire and sicken, and soon seek the surface, which is very injurious to the sport, as it is seldom that pike or jack will rise to the surface except they are very full on the feed; nor will they often take a spent fish. Minnows are likewise killing baits for moderate sized jack, but they soon seek the surface also. In canals, rivers, and brooks they are, however, prizeable baits, as the lesser pike are very fond of them. It may be considered as a general rule, that large baits will tempt the most attacks, but that smaller ones will take the most fish; and a good sized gudgeon is a fair standard measurement for live bait where the pike are not enormous. In trolling, also, the size of the fish and state of the water must be considered: if the water be extensive, or if it be a little thickened and tinged, then a brighter and a larger bait is desirable; it is the same in snap-fishing likewise where both the colour and size of the bait stimulate to the attack, and the certainty of the snap insures the prize; but in live bait fishing such sized fish are to be preferred, as the jack and pike can most readily gorge.

3604. "*Live baits in pike fishing*," Captain Williamson observes, "generally answer best in mid-water, that is to say, they ought to swim half-way to the bottom, whereby they will be deep enough to be seen by the great fish that are on the feel. Sometimes your baits must be sunk lower, especially in very turbulent waters, or in boisterous weather; for in the former they are subject to be occasionally thrown near the surface; and in the latter, most of the great fishes, of prey especially, get into the deeps among the smaller timid fry, which on such occasions go down for warmth and quiet. Live baits are more appropriate to deep than to shallow waters; for even the more ravenous fish do not so much like to seize their prey near the surface, though when very hungry they will take it there, and even dart out of the water at their object, as we often see trout, &c. doing while in chace of small

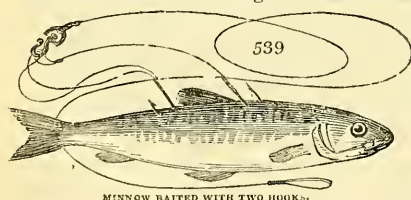
fishes. The angler will find on the long run that he will catch infinitely more fish at a good depth than he will near the surface; which is to be accounted for by the disposition to privacy and concealment natural to all fishes, especially to those which lurk in hiding places, and dart out suddenly on their unsuspecting victims, as well as to the variety of ambushes and shelters which the weeds and banks afford in those deep holes that are formed by falls of water, by eddies, or by the natural tendency of the soil in many places to wash away, until a harder surface resists the stream and forms a secure ledge, or cover, under which fishes can remain. Where weeds or other obstructions abound, live baits cannot be conveniently used, as they would, if half as active as they ought to be, infallibly entangle you; and even though you should be able to distinguish when you might have a bite, would occasion much risk as to the safety of your line."

3605. *To procure and preserve live baits*: ample instructions have already been given, (p.1017.): whatever kind is used, there should be at least a dozen taken to the water; we have had double that quantity consumed in a day's fishing by accidents, and by the voraciousness of the jack, who often releases the fish without being ensnared himself.

3606. *A cork float* is to be used in most instances in live bait fishing, proportioned to the size of the bait-fish. Mr. Salter says that a float which will suspend about half an ounce of lead, and a bait of five or six inches in length, will be found the most useful. This is certainly correct for such waters as surround the metropolis; but in the extensive lochs of Scotland the proportions must be doubled, and also in some preserved sheets of water, where the pike are very voracious, and strike best at a large bait. When small baits are used, well twisted gut, particularly in summer, will often be found the most killing; but if good pike are in the water, and there are wind and extent of service, very fine gimp, saddened in its colour with coffee grounds, is to be preferred. Mr. Salter very justly objects to a long float for live bait fishing, because it not only is a more striking object in the water, which in summer is clear and often shallow, but also because its projections catch in the weeds as the jack retires to pouch the bait, and the shock thereby given alarms him, and he often drops it. Mr. S. therefore proposes to take away both the plug below and the quill above from the usual cork float, and passing the line upwards through the hole in the cork, to secure it at top by a large sized ivory cribbage-peg, which is to appear only one quarter of an inch above the cork. With all due respect for this excellent practical angler, we cannot but smile at the substitute; and it begets, by a natural association of ideas, a train of concomitants of mantling jugs, lighted pipes, and angling stores rehearsed, when enter cribbage-board, pegs and all, and here they are in place: but we would recommend, instead of the common long cork float thus dismantled of its appendages, that a lengthened pear-shaped cork be perforated with a gimlet, into the upper surface of which a wooden (not an ivory) plug be placed to secure the line. The plug being of wood will not be liable to slip out; and instead of being tapered to nothing as a cribbage-peg, its diameter should be nearly uniform, to fill up the opening equally from the top to the bottom. The young angler will probably think these minutiae of Mr. S. and of ourselves unnecessary; but experience will convince him that they are otherwise, for if practised by those who are old in the school, it must surely be for some purpose: few seek trouble for nothing; they may therefore be supposed to have been adopted from a conviction, that the employment of them was beneficial; and that having been found so, they would, if described, prove advantageous to others. Under this view, when describing the art, the introduction of these minutiae becomes part of the instructor's duty. It is in these lesser matters, and on the manipulations connected with them, that the finished angler shines out; and without ample detail the young angler, though he travel with the principles gained from the usual authorities, may be years in working out his way to attain proficiency: but with such a work as Salter's, and with water and fish before him, it is a man's own fault if he be not a good bottom fisher in a twelvemonth.

3607. *Swivel-traces* are proper for live bait fishing, unless there be a certainty that the water is only stored with very small jack, when a double gut line and small cork float, shotted in the usual manner, so as to poise the cork to a proper depth, will be sufficient; but in all other cases it is prudent to use the single swivel-trace (fig. 538.).

3608. *The live bait is hooked for fishing in various ways.* One of the most simple and least painful, is to pass the hook under the back fin, just even with the roots of its rays, including a small portion of its skin only, by which means the fish will not be materially injured, and will continue to swim strong and show itself. In this method it has been found that the struggles of the fish, or the violence of the striking of a jack, has often forced the bait from the hook; to prevent which a thread has been carried round the point of the hook on one side, and being passed under the belly has been fastened to the shank of the other side, but this deforms the fish and injures its vitality; it is therefore not an eligible practice: its object may be attained in a much more effectual manner thus,—instead of one make use of two strong but small hooks, No. 3, 4, or 5. according to the size of the



MINNOW BAITED WITH TWO HOOKS.

This method, we can venture to promise, will prevent the escape of the bait, and is, as we believe, extremely effective in taking the prey also.

3609. *Hooking by the lip* is also a favourite method with some persons, but it distresses the fish much, and if the hook is allowed to pass through one lip only, it is seldom secure. We have seen two hooks used, size No. 5., each whipped to an inch of gut, one of which was passed through the upper and the other through the under lip, and we had reason to think that both the above disadvantages were obviated by the method.

3610. "*The double bead-hook*," Mr. Daniel says, "is used by putting the lead into the mouth of the live bait, and sewing it up; the fish will live some time, and, notwithstanding the lead, will swim with the support he receives from the line, with nearly the same ease as if at liberty: this is the most successful way of tempting the pike." The practice is objectionable on the score of its inefficiency, for a gudgeon thus served (which is the best way to try it on) will certainly live some time, although its mouth be sewn up, the water applying itself partly through the mouth and partly through the gill openings to the gill fringes, and thus furnishing the blood with atmospheric air: but we have also seen, as Mr. Salter observes, that when this method has been employed, although the bait could not escape, yet when struck it was commonly rejected, the bends of the hooks reaching the fish immediately when he prepares to turn it, alarm him. It is still more objectionable, on the score of its continually catching hold of the weeds, thus greatly interrupting the sport, and rendering this method very harassing. The formation of the bead-hook does not require much detail; the figure (p. 1113.) will show that it is a double hook whipped either to double twisted gut, or to a piece of gimp eight or nine inches long, including in the whipping a conical or bead-lead, hung by two or three small links of chain.

3611. *A double hook*, without bead and differently entered, is advocated by Mr. Salter as the most killing method, and to be preferred to every other. As far as its killing qualities go, it is certainly very effective; but without pretending to any unnecessary or extraordinary sensibility, we never could, with any degree of comfort to ourselves, *empane* the bait in the manner here described, although in the few trials we have made of it, its killing qualities appear to be what Mr. Salter and others have alleged. The method employed is as follows: take a double hook of such a *spread*, that the barbs will not project beyond the upper and under surfaces of the bait for which you intend it; and to fulfil this intention, the necessity of being furnished with double hooks of different dimensions is apparent. When, however, such variety is not at hand, two common hooks of the proper size being firmly whipped together, back to back, will answer the purpose. We hardly need observe, that a deep-bodied fish, as a roach, &c., will present a larger surface for the spread of the hooks than one of a rounder figure, as a gudgeon. Attach to the double hook about eight or ten inches of either gimp or strong double gut, recollecting that gimp will last much longer than gut, which if not broken often becomes frayed, and therefore requires more frequent repair; but on the other hand it is finer, and consequently often more killing; circumstances, however, must direct the choice.

3612. *To arm the bait-fish*, proceed as follows:—Having first made a sufficient opening for the purpose with the point of a penknife, enter the baiting-needle hooked to the gimp directly under the skin from the shoulders (see *fig.* 510. p. 1019.) towards the hinder extremity of the back fin, at the root of which bring it carefully out again; but avoid injuring the flesh during the operation, and the bait will swim strong and well for a considerable time. There is one inconvenience in this method, which is, that the hooks after a few casts are apt to tear away the skin, and injure both the liveliness and the appearance of the bait; to obviate which Mr. Salter recommends that a No. 9. hook be tied to about an inch of gut looped at its unattached end. This loop he passes over the gimp length, as seen (*fig.* 511.), and fixes it into the under lip of the bait's mouth, which, he says, prevents the stretching force of the double hook from tearing away the skin or flesh. As we think it not improbable (for we never tried this method) that the lip hook from the placing of the gimp hooks may interfere with the action of the gills, we recommend that it be carried across the head, and fixed in the contrary nostril.

3613. *The bait being properly fixed*, cast it lightly into the water with the line drawn out to two-thirds the length of the rod, observing to make the first cast *in shore*, but be as much concealed as possible from view. If success does not follow this, extend the throw further into the water, and to do that with effect, give the impulsive swing of the bait with the same length of line as before, but have in addition a yard or two of loose line in the left hand, which, as the bait flies forward, loosen quickly from the hand, and as it arrives at its destination drop the point of the rod, which will ease the bait into the water without injury to itself, or alarm to the pike. The attempts of the live bait to make for the weeds or the shore, must be counteracted by drawing it back or by giving it a new direction, and as it flags in liveliness, *stimulate* it by shaking the rod a little, which often *stimulates* the jack also to strike at the bait. In drawing up the bait to remove it to a new situation, observe to do it gently, and at the same time watch the water, for it is not at all uncommon for a jack to follow on its attempted removal. If any thing of this kind is perceived, by no means remove the bait, but lower it again into the water, and begin moving it quickly at a few inches below the surface backwards and forwards. In all cases keep the float in sight, but avoid showing yourself if possible, particularly in the summer months, and when the weather and water are both bright. At such a time to increase your small chance of sport, try to get the sun before you and the wind behind: the former you might well dispense with altogether, the other will prove your best friend: but if there be sun, you must at least take care that it do not reflect either your own shadow, or that of your rod on the

water. In the months of February, October, and November, this may be of little consequence; but it is otherwise in the spring and summer months.

3614. *Be careful not to mistake the motions of the bait* for those which are made by the pike or jack when seizing it. With the experienced angler there is no danger in this, but one less initiated might be apt to fall into the error, particularly as the mere sight of the jack will sometimes make the bait throw itself out of water to avoid its dreaded foe. The proficient at such a time will do nothing more than gently move his bait, as though it were going to leave the spot, which alone will sometimes occasion the jack to seize it at once. The seizure of the bait by the pike is marked by the float, which is not thrown up, but, on the contrary, is drawn violently down; and the water is likewise observed to undulate, unless the bait be seized at a considerable depth. Be prepared for this with a free line as regards the reel, it is also a good plan to have in the left hand a yard or two of loose line to give out as the pike runs, which is infinitely preferable to allowing it to be pulled by the fish himself from the reel; which alone, with a pike not well on the feed, will cause him to reject it. Whatever line therefore is required in the progress of the fish to his hold or haunt, veer it out by the hand, and such hold is seldom far off, and he will, when there, probably stop to gorge the bait.

3615. *In striking let not impatience tempt you*: wait until you are certain that the pike has actually gorged the bait; otherwise your slight hold on both bait and prey will tear away, and you will lose both at the same effort. The pouching time is by no means definite (see *Trolling*, p. 1112.), but is regulated by circumstances: thus, having satisfied yourself by the previous stillness of the pike or jack, that he is gorging it, and by his again moving out from his retreat (which signal you must look for), that he has actually done so; give your line a smart hand stroke, which will fix the barbs into the maw beyond the power of ejection.

3616. *Of live bait fishing* however, as compared with other methods practised, it may be said, that, like many other affairs, it has its bright and its cloudy aspects. It is well adapted to still water fishing, as well as to quiet fishers, particularly to such as are partial to float angling. It requires little exertion, and may be pursued with more rods than one, which with some persons is a great recommendation. In the spring, before aquatic plants have accumulated, and late in the autumn, when they have rotted off, and a flood has cleared away their foul remains, live bait jack fishing is a pleasant and even a productive practice. But it must be acknowledged to be very inferior to dead bait trolling in almost every point of view—it is less ingenious, less active, and not so fertile of sport.—It is also very inconvenient in weedy waters, and waters of this character are those most resorted to by jack and pike.

3617. *Of the frog as a live bait* for jack and pike, our own opinion as to its value, and to the methods of using it, appear in the section on living baits, to which we refer the angler, contenting ourselves with cautioning the practitioner not to be misled by the directions inserted in many of our angling treatises. Even Mr. Daniel, neglecting to use his own discretion, and contenting himself with literally copying what he meets with, directs the arming wire to be put in at the frog's mouth and *out at his gills!* query, Where are they to be found?

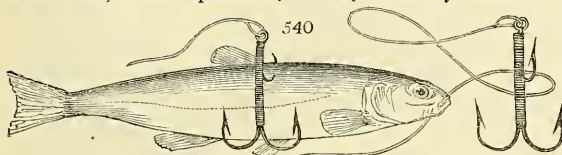
3618. *Of flies as baits for pike*, no instructions are necessary; instances are however sufficiently numerous, that these fish will occasionally take them. We ourselves so took a jack in the Grand Junction Canal on Boxmore, Herts; but whether they are caught at by these fish from wantonness, or from the exercise of their natural voracity, it is certain that the practice of fly-fishing for them has not yet appeared among our angling statutes at large. Mr. Daniel, however, not only thinks differently, but introduces a figure of the jaws of a pike taken from "Loch Ken near New Galloway in Scotland, with a common fly, made of the peacock's feather; it weighed," he says, "seventy-two pounds;" and we are further told that the skeleton of the head is still at Kenmore Castle. Mr. Daniel seems so convinced of this fact (and if not very probable, it is certainly not impossible), that he offers a long description, proper to allure other salmon, made of course of very gaudy materials, such as pheasants', peacocks', or mallards' feathers; the brown and softest part of a bear's fur; the reddish part of that of a squirrel, with some yellow mohair for the body. The head is formed of a little fur, some gold twist, and two small black or blue beads for the eyes; the body must be framed rough, full, and round; the wings not parted, but to stand upright on the back, and some small feathers continued thence all down the back to the end of the tail, so that when finished they may be left a little longer than the hook, and the whole to be about the size of a wren. A fly thus made, he avers, will often take pike, when other baits are of no avail, especially in dark windy days; the fly must be moved quick when in the water, and kept on the surface if possible. Several sorts of these flies we know are kept, and are to be had at all the fishing-tackle shops. As we neither deny nor doubt the fact that the jack will, on some occasions, take the fly, we yet suspect that it is not either the colours or the form of the fly, but its size and supposed resemblance to a small bird or mouse, which prompts the pike in the Scotch lakes to rise at it. The young of the aquatic birds are so regularly devoured by these fish, and even swallows when dipping are so frequently darted at by them, that we need not be surprised if any thing flying over the water be caught at in this way. Now, when we were last journeying northward, we were assured that the largest pike of the lakes do rise to flies; it did not, however, often occur; but nevertheless it was stated to be a well-known habit of the pike to throw themselves out of the water after large flies.

SECT. XXI. *Snap-bait Angling for Pike or Jack.*

3619. *The snap-bait variety* is seldom chosen in pike fishing by preference, but is rather forced on the fisher in the spring and summer months, when pike and jack are not much on the alert in taking baits. On the contrary, if one of them does seize a bait at these times, he is apt not to pouch or gorge it, but after roving about with it in his mouth for some time, he ejects or *blows* it out, as anglers term it. Snap-fishing, we may add, intermixes itself with live bait fishing, and with trolling also; or rather, on some occasions, we add a snap mode of striking the pike to the other methods; we have therefore live snap,

and dead snap, and now and then snap-hooks are likewise added to a gorge-hook in trolling, and that with perfect success. In all cases, therefore, if the bait-hooks are such as can be depended on, and the rod be sufficiently strong, the methods already described, and such as are to follow, may be made snap-fishing by simply striking the fish at once, instead of allowing him to take the bait away to his hold: the principal, and indeed the only difference being, that when we go out with the intent of snap-angling, our hooks are large, and ought to be strong also, and our rod is strong and short.

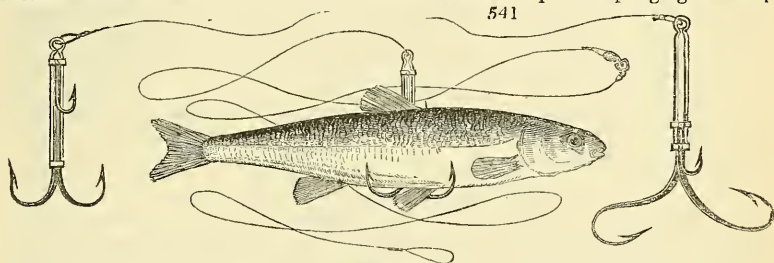
3620. *Live bait-snap* (fig. 540.). The most simple of these, and yet one of a very excellent kind, is here represented, and may be readily made from an inspection of the figure,



LIVE BAIT-SNAP.

and attention to the following directions:—Take two strong hooks, of size No. 3 or 4., according to the strength of their make, as well as to the size of the bait: tie each to about an inch and a quarter of fine twisted wire, and again tie these two wires together, including in the tie a hook, No. 8 or 9., and also eight or ten inches of gimp, which loop at the other end: but in the tying, place the large hooks contrarywise, so that one may point towards the head, and the other towards the tail of the bait-fish, which will greatly increase the chance of success when using it. To apply this, enter the small hook under the back fin, and allow one of the two large hooks to apply itself close to one side of the bait, and the other to be similarly placed on the other, but with the direction of their points reversed. We have often, even when the spring-snap has been in our book, made use of this more simple plan in preference, particularly where our only baits were gudgeons. A good sized roach, or dace, can conceal the spring-snap, but it is hardly applicable in any way to a small fish.

3621. *Dead bait spring-snap* (fig. 541.) This machine can be applied either to the dead or to the living bait; it is, however, we think, more applicable to the former, as it requires a sufficient hold to be made on the bait to offer a resistance equal to springing the snap,



SPRING-SNAP BAIT.

or the benefit is lost: such a hold is injurious to the live bait, and soon destroys it. No bait answers so well for the placing of the spring-snap as either a roach, bream, or perch, on account of the breadth of their figures; but to either of these, and to the roach particularly, it can be readily and conveniently attached. Choose a fresh dead roach, of from three to five or six ounces; insert the small hook of the spring as represented in the figure, so as to take a firmer and deeper hold than when applied to a living one. If the apparatus, from its size, must project beyond the line of the fish form, let it be above; but by no means allow the bends of the hooks to appear under the ventral surface. The side figures, exhibiting the snap sprung and unsprung, furnish a sufficient exemplification of its mode of action: in seizing the bait, the pike or jack draws the hooks out of the detaining frame; these in consequence immediately expand, and fix themselves into the jaws of the fish which has seized it. It may be well to remark that Mr. Daniel's plate exhibits three other varieties of dead snap-hooks, the first having two, and the second four hooks; consequently, although the trouble by the latter is somewhat increased, the chances of success are multiplied. The third, it will be seen, has six hooks. (See *Daniel's Rural Sports*, vol. ii.)

3622. *Of the hooks in snap-fishing*, we must again say, it is of great consequence that those to strike the pike be so placed as to easily clear themselves; if therefore it is expected of these hooks that they shall support and play the fish, and yet be ready at a moment to disengage themselves from this attachment, then too much is expected of them; and when they ought to be *free*, to strike at once into the mouth of the pike, they are apt to be *buried deep* in the body of the bait. It was purposely to receive this strain on the bait, that we added to the traces a small hook, which then left the large hooks at liberty to disengage

themselves: for on the small hooks the stress of the action of playing the fish was then altogether placed. It is on this principle that snap-baits in general should be formed, and where they have not some sustaining hooks, independent of the snap-hooks, then they ought never to be passed through the centre of the body of the bait-fish, but superficially under the skin only, so that when the pike strikes, the skin of the bait may readily tear away by the united forces of the stroke of the angler and his prey, the consequence of which is, that the hook or hooks immediately disengage themselves from the bait, and penetrating the mouth of the pike, they retain him.

3623. *The methods of snap-baiting are very numerous, and the tackle employed is extremely varied; but we believe we have exhibited all that are necessary. Of these, two are somewhat novel, and will be found more than usually effective, and as such we recommend them. From the principles laid down, the plans of baiting may be varied to an almost endless extent. The tackle employed is likewise equally capable of alteration: but two intentions must govern both, which are quickness and strength. The rod should be short and stiff; to allow of a very sudden and forcible stroke, and to enable the angler to land his fish without loss of time. The line must correspond in strength with the rest; its length, it may be remarked, is not of much import; some snap anglers even use no reel. The hooks must be strong; in general, they are large also, which we think they ought not to be; on the contrary, we recommend that smaller hooks be made use of, particularly in the live bait snap; but that no diminution of strength may occur, we advise that they be made of stronger wire, after the manner of barbel hooks. In the dead snap it is usually thought of little consequence that the hooks project and show themselves beyond the line of the bait, and it is certainly less important here where the rush prevents the pike from attending to minutiae. It is, however, much better to have every thing, even in this method, as much concealed as possible; and we are convinced that the angler who is most particular in this respect will catch most fish. Of the methods of procuring and keeping live baits, we need say nothing here, but refer the angler to the section on that head. Some anglers cut away the fins of the dead baits, which we rather recommend, more because they are apt to hang in the weeds than for any other reason. Where it is done to spin or turn the bait better, the opposite fins on each only should be removed. When your bait is cast into the water, the attention should be immediately engaged by grasping the rod firmly, and keeping yourself in readiness to seize the first intimation of a bite. If the day be warm, and near its meridian, and particularly if you are angling in the early summer months, try the shallows, the edges of pools, and the sides of sedges, reeds, and weed-beds. If it be cold, try the deeper parts; and when a breeze favours the efforts, rove extensively in every direction. When you feel a bite strike quickly and forcibly, which done, if you find your fish secure land him at once, or play him as you please: the former is the safer method, as a mouth-hold is less to be depended upon than the stomach-hold gained by the other methods.*

SECT. XXII. *Trolling for Pike or Jack.*

3624. *The trolling rod (fig. 477. p. 964.), has already been described as one which ought to combine the qualities of strength with lightness, and yet be of sufficient length to give the bait the benefit of extensive scope. The line should also be strong, pliant, and even, and in sufficient quantity. We strongly recommend it to be wound on a full sized pillar-reel or winch, in preference to using a thumb-winder, bank-runner, or to trailing it on the ground, which are the principal of many modes in use for veering out the trolling line; but for general purposes none equal the winch or reel. We have known some anglers carry their line in their pocket: others have wound it round their hat, and were therefore forced to deposit their *castor* on the ground before they could prepare themselves for a *run*. Another that we saw was singularly accoutred, with a strap around his thigh: to this was ferruled an enormous wooden grooved wheel, around which he wound his line by a peg, and he did it in a manner which appeared to answer his purpose sufficiently *well*; but it looked sufficiently *ill*: we suggested to him that he might transfer this wheel to his rod after the manner of the French, which he had not before thought of. Mr. Nobbs tells us, "you may wind the line upon a roll that turns upon a ring, with your finger in it, having no more in your hand than you make use of, so you may unwind it at your leisure. Some draw it after them at length, which I approve as a very good way, if there is no impediments, as shrubs or bushes, to interrupt or make them go back; it will be ready to cast out, and you may throw it the farther: but if you hold a great deal loose in your hand, it will be apt to knot and entangle. Some object to drawing the line upon the ground, lest it wear out: but it sooner dries, and when it is dry it can take but little harm. Besides, a pike will sometimes be so hasty and furious, that he will scarcely give you leave to unwind fast enough; and therefore the surest way to trepan your fish is to have your line at command, and in complete readiness."*

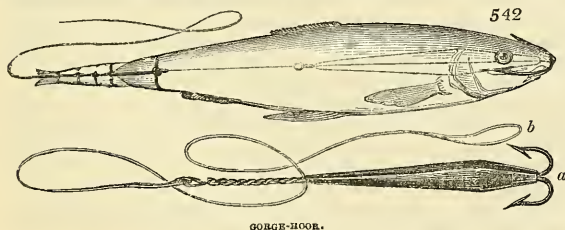
3625. *The plain pillar-reel is certainly the safest for very heavy fish; but nevertheless, if the angler uses a multiplier on the best principle, it will wind up in all ordinary cases without clogging, and as fast as it can be wanted. For the giving out of line it will*

of course answer, as the hand can readily assist it. The ground line however may be used with advantage when, instead of a trolling rod, a ferruled stick is employed, of three or four feet long; and it is more useful sometimes even than a rod in trolling from a boat, or from the high bank of a very wide river. From such a height, with the trolling stick in the right hand, a quantity of loose line lying by the side, in regular coils, when baited and being passed through the ferrule or end ring, and the bait dangling on a portion of two feet in length, take hold of this part with the left hand, and now by means of the right hand, which upholds the trolling stick, swing the bait-fish until it has gained its momentum; then deliver it well from the hand in any direction you choose, guiding the passage of the line through the ring by the inclination of the stick and the aid of the left hand. We have known a line carried in this way nearly forty yards, and we believe it can be projected even to fifty, whereas it would be difficult to deliver it to any such distance with the trolling rod. But this method is seldom practised by those who angle to kill their fish in the most sportsmanlike manner; for it allows no playing of the pike, or at least none of that masterly struggle for victory which a strained line and yielding rod give. A rod is also infinitely preferable for the numerous diversities which a river presents: by its means the bait can be lifted over sedges, directed into pools, and dropped into the water-runs between weed-beds, more readily than by any other method. A few slovenly fishers likewise troll with nothing more than a pole with a forked top, which is used after the bait has been cast out, to direct its progress, and to lift it here and there as occasion requires. We knew a man who shaved himself with a hatchet, and we should opine that such fishing and such shaving might, in an exhibition of rough contrivances, compete for the palm.

3626. *Swivel-traces* (fig. 538., p. 1106.) are necessary in trolling, for by their means it is that the bait revolves quickly, and answers to its character of a *troll* or *rolling* matter, which motion assists greatly in attracting the notice of the predaceous fish. The swivel-traces used with the gorge-hook require no leading, the hook being of itself sufficiently weighted, in which these traces only differ from those already figured. Some troll wholly without a trace, but we are certain that it is to the manifest injury of the spinning of the bait, and we therefore strongly recommend its use. By means of the swivel-hook a great convenience is also obtained as the tackle becomes so readily disengaged; but it is to be noted that, in releasing it, the ardent angler sometimes is violent and snaps his swivel, which is another reason why no prudent one should go without spare traces, or indeed without duplicates of all the minor articles of fishing apparatus.

3627. *The gorge-hook tackle* is the leading feature in the practice of trolling. Varieties of these are kept at the shops of all sizes and figures; and before we proceed to describe the gorge apparatus generally, we shall hint that the necessity of having several sizes of these hooks is apparent, since the trolling bait will include fish from the dimensions of a minnow to those of a roach of four, six, or even eight ounces. It is likewise not only necessary that these hooks be kept in readiness of different sizes, but also of different figures, appropriate to the shape as well as to the size of the bait-fish. The minnow and the gudgeon and perch are sufficiently rounded in their bodies to conceal a round leaded gorge-hook, corresponding with their size; but for the bleak, and both roach and dace, which are more flat-sided, we recommend that the lead be flattened somewhat, and be more oval than round. Mr. Salter judiciously observes, "I generally remove about a third of the lead from the brass of those hooks which I find kept ready for sale at the fishing-tackle shops, because I have found, when the lead lies nearly the whole length of the bait-fish, and especially of a bleak or thin roach, that when the jack strikes it, his teeth pierce through the flesh, and touch the lead; he then immediately drops the bait. Now, by removing a part of the lead as above directed, the angler will find the remainder to be sufficient for sinking, &c. his bait, and it will lie at the bottom of the throat, or only a little lower; and as jack generally seize their prey by or across the middle, in such case his teeth seldom come in contact with the lead; and he then, without fear, retires to his haunt, and soon pouches the whole."

3628. *The general formation* of the gorge-hook (figs. 511. 542.) is that of one double hook, or of two single eel-hooks joined (*a*) together, with a continuation from their shanks



of a piece of twisted brass wire, the end of which usually forms a loop (*b*). The union between the hooks and brass wire is hid by an encircling of lead, which is sometimes finished off in an octagon shape, and sometimes it is squared; but it should, however, by no means

be at all angular, as the sharp edges would not be unlikely to meet the mouth of the jack ere

he pouches the bait, and to make him reject it. To prevent the pike jarring his teeth against the wire of the gorge-hook, usually continued to the tail of the bait, some anglers use a short wired gorge, the fish being kept straight by the gimp, which is continued to the tail, and there tightly bound with waxed silk, as shown in the cut (*fig. 542.*). Nor must we omit this opportunity of noticing the readiness with which Mr. Bowness, sen., of Bell-yard, supplied our artist with this and other improved articles to copy from. To the loop in the wire attach about eight inches of gimp, making a fine loop at the other end of it, to hang on the swivel-hook of the swivel-traces (*fig. 538.*).

3629. *To bait the gorge-hook*, take a baiting-needle, and hook the curved end to the loop of gimp, to which the wire is fastened; then enter the point of the needle into the mouth of the bait, and bring it out at the middle of the fork of its tail; the lead will then lie concealed in the bait's belly, the barbs and points outside turning upwards. To keep the bait firm on the hooks, it is necessary to tie the tail part fast to the gimp with white thread; but let a needle and thread be passed through the flesh on each side of the bait, near the tail, which is a much neater way than tying round the outside. Be it observed, the hooks should invariably point upwards, as they are seen in the figure. This we recommend, though it is the practice of some anglers to turn them downwards. Observe, also, that they do not stand too far out from the sides of the bait's mouth, otherwise they will prove troublesome among weeds, and may probably either prick, or be perceived by the pike. The single gorge-hook is chosen by some good trollers, and must not, therefore, be lightly condemned, although we have ourselves always employed the double one. Nobbs says: — "I commonly made use of the single hook, which strikes as sure as the other. The double hook hath one advantage above the other, that if it meets with such resistance in the water that it loses one side of it, the other part, with a little filing, may be still as serviceable as it was before: it is more troublesome in the water, and more apt to check and take hold of the weeds and roots; it is best for a great bait, for if you put a small and slender bait on a double hook, it will hang out and bear off so much in the bending, that a pike may not only discover the delusion, but if he takes it, it may check him in his feeding, and so hinder him from gorging it." Some anglers sew up the mouth of the bait after they have introduced the gorge, which we consider as not very material: the lips certainly conceal the bends of the hook rather better when sewn up than when left open, which is all the advantage gained.

3630. *The method of holding the rod* differs in the practice of different anglers; some grasp it firmly in their right hand, and depend on the strength of their arm for delivering the bait out to its extent: but we apprehend that much the better method is that of resting the butt against the hip, thigh, stomach, or wherever a convenient support can be obtained (we always used our hip for the purpose), by which much exertion is saved, the bait can be cast much wider; and when the angler is accustomed to the habit, he may, by this means, direct it within a few inches of the spot he aims at. The rod placed, and the bait swinging, on such a length of line as can be managed, retain within the left hand a yard of it loose, which as the bait is cast, gradually let run off the hand, directing it rather slantingly; by such means it will shoot diagonally forward, with a natural appearance, impelled by the weight of the lead. When delivered, begin to move it after the manner of the motion of a fish about mid-water, observing always to avoid removing it quickly from the water for a new throw, for both pike and jack often follow the bait and seize it at the moment it rises towards the surface, fearful it is going to throw itself out of the water to avoid the pursuit.

3631. *In the practice of trolling*, a due degree of caution must be observed throughout. Avoid alarming the fish by unnecessary noise, and keep as much concealed from view as possible; the length of the rod will assist greatly in this particular; by it the angler can reach over the bank without approaching too near. The sides of every water should be first tried to the right and left; this done, proceed somewhat further in, but avoid making either much noise or much splash in the water, by the cast of the bait: try every spot, but do not dwell on any, or try it twice, once showing it is usually sufficient for the most likely places. Very much of the success in trolling depends on the method of displaying the bait, which, of course, should represent the natural actions of the fish, and is best effected by first giving to the bait a slanting direction on its entering the water, and keeping it in the same position by means of the hand. Never allow the bait to be still, but keep it ever in moderate motion, not in violent agitation, as is too apt to be done, which practice, we suspect, is more detrimental to sport in trolling than is imagined, for we have had runs by trolling more slowly over the same spots which others had but just quitted without one. A little habit will enable the angler to vary his methods of showing his bait, according to the extent and nature of his water. Where there are large weed-beds, intersected by openings between their waving masses, or where large aquatic plants rise up in patches, there the bait must be carefully dipped directly down, to avoid entanglement; and there the angler must be prepared, not to mistake the check given by the weeds for a real bite, which it often very nearly resembles. When such a check occurs, pause a few seconds, and if all continues quiet, draw the bait gently towards you; when, if the resistance is obstinate, and yet

tremulous, a jack is at it, and your moving it will most probably induce him to drop it, or otherwise gorge it. Do the same if the bait move slightly forward, with a renewed check, for there is then more certainty that something is at it; after this, if it remain a dead weight on the hand, it is probable that the jack has quitted it, and left the hooks entangled in the weeds, which is by no means uncommon in these cases; you may, therefore, now draw at it with a little more force, which will certainly inform you of the nature of the resistance, and yet allow you time to retrace your steps, if a jack be there in earnest.

3632. "*When you have a run*, or, in other words, when a pike or jack has seized your bait, lower the point of the rod towards the water, and at the same time draw the line gradually from the reel with your left hand, so that nothing may impede or check the progress of the fish in carrying the bait to its hole in order to pouch it. Do not strike until the pike has had possession of the bait about seven minutes, or till the line shakes or moves in the water, then wind up the slack line, and turn the rod, so that the reel may be uppermost instead of underneath, then strike, but not with violence." Taylor offers an excellent practical remark on striking when he says, "The pike will, as soon as he has seized a bait, run to his hold to pouch or swallow it; allow him therefore five minutes to do so (unless the line slackens before that time, which is a signal that he has already done it), and then strike. But if after he has run off with the bait, he makes scarcely any stay with it at his hold, but goes off with it again, you should not strike him till he has rested a second time, allowing him still about five minutes; but if he should run off a third time before the five minutes are expired, draw a tight line, and strike him instantly." Captain Williamson observes, that "when you see a great number of very small bubbles rising from the spot where you know, by the direction of your line, the jack is lying, you should forbear from striking, it being a certain sign that he has not pouched your bait."

3633. *The pike being struck*, the first directions continue, "If it should be a large fish, and the place open, give more line, and do not pull hard at any time, unless your tackle should be in danger of entangling among weeds or bushes; and when this is the case, the utmost caution is necessary, lest the rod, line, hook, or hold, should break. When completely exhausted and brought to the side, take it up with a net, or fix a landing hook in it, either through the upper lip, or under the lower jaw; or, if in want of either of these, put your thumb and finger into its eyes, which is the most safe hold with the hand." It is also most judiciously remarked by Mr. Salter, "When you have hooked a jack or pike, and played him till he is quite exhausted, and you are drawing him ashore, make it a rule to float him on his side, and keep the head a little raised above the surface of the water, that the nose or gills may not hang to, or catch hold of, weeds, &c. while you are thus engaged bringing your prize to the shore; for sometimes you cannot avoid drawing it over or among weeds; and I have seen a pike touch and get entangled this way, and before it could be disentangled, it recovered from its exhaustion or stupor, and occasioned much trouble and hazard before it could be again subdued."

3634. *The seasons for trolling* are so well laid down by Nobbs, from whose writings so many anglers have derived their first instructions, that we will present his remarks as they stand recorded:—"Though the depth of winter cannot be recommended for angling, yet there are some days in December or January that a man may pick out to stand two or three hours by the river side, but the weather must be open and temperate: the great fish will be soonest enticed with the bait at that time of the year, because they lie deep, and are not so careful of their own preservation. There is another great advantage for the winter troller,—the weeds are then down and rotten, which are a great hindrance both against throwing the bait, and in keeping the fish from the sight of it. Though a pike delights much among the weeds, and usually makes his abode there, yet it is very difficult to take him there, except it be with the snap; for if you give him the liberty of running and playing with your bait, he winds himself so fast about the weeds, that you may be in some danger of losing both your fish and hook, if your line is not very strong: if you take a snap, you will be troubled with them. for they are great enemies to that. Trolling in January, even on favourable days, when the season is moderate, and the water in order, which is rare in this month, is but labour well nigh lost; for if it is not a flood, yet the ditches and brooks are commonly so rank and full, that it is but indifferent fishing. February presents better prospects, and on some days these fish take a bait eagerly. March, too, is very seasonable to the troller, excepting the time of spawning, which usually begins about the middle of it, except the spring is very forward, and then they will be disinclined towards preying. The snap is now the most taking way; for if you fish at pouch, you may have many runs, but scarcely take one except it be a male fish. These two months therefore will try the pike-fisher's patience, even though he be wind and weather proof. April will however, in all probability, make him amend for his former sufferings."

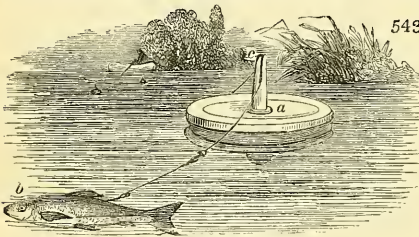
3635. *The autumn season*, Nobbs considers as affording good sport, which commences with October, "the weather being then temperate, and the weeds, which were strong and high before, are now dying and falling to the bottom. The rivers are then generally low, which is a great advantage, because the fish are more easily found in their harbours; they leave the shallows and scowers, and lodge themselves in pits and the deepest places. A pike is now very firm and fat, having had the benefit of the summer's food: and if the weather continues open, and not extraordinarily cold, you may take in part of November, which will add much to your sport, because the weeds will be more wasted and rotten; but if a flood comes in October, or the beginning of November, you may lay aside your tackling for that season; for great rivers (like great vessels), being long in filling and slowly mounting to their full height, are again long in falling and settling, so that the water will be thick and out of order, unless frost or fair weather come to clear it. In small brooks and rivulets it is not so; you may fish there again within a week or less after the flood."

3636. *The artificial bait called the devil* (see p. 1026.), is also used in the taking of jack after the method used for trout; but for this purpose it is usually made larger, and the fly-hooks attached to it are proportionately stronger. It is, however, apt to be much torn when it has been mouthed by a fish which, to those who are careless about expense, is no objection to its use, particularly when other baits cannot be procured.

3637. *When a pike has been brought to land*, the inexperienced angler should be warned to be careful of his jaws, and to observe that after he appears wholly exhausted, he can yet bite severely. He can also, if he be not immediately stunned, make his way again to the water most artfully by repeated jumps, of which we witnessed a most ludicrous instance. The pike being stunned, it becomes necessary to recover the gorge-hook from his maw. To do this, turn him on his side, and set the hollow of your foot close behind his gills; then, with your spud wrench open his mouth, and introduce your disgorging. If the hooks are in the maw, as they usually are under the gorging system, open the fish's stomach about the middle, and you will be about opposite to, or rather under, the points, so that your gimp will be safe. Cut away the parts that are hooked, and unslipping the knot that holds the gimp to the reel line, draw your bait, hooks and gimp, all through the aperture you made in the stomach. This will disfigure the fish far less than cutting down the jaws, until the hooks can be got out through the mouth. It is a good plan in trolling, to be provided with two or three sticks of various lengths, one of these will assist to prop open a jack's mouth while the angler is attempting the extraction of the hook, but by no means trust your fingers in his mouth unless he be gagged.

SUBJECT. 1. *Taking Pike and Jack by Trimmers and Bank-runners.*

3638. *Neither of these modes of taking pike* is considered legitimate fishing; yet as there are situations where other methods of taking them are hardly practicable, so here the use

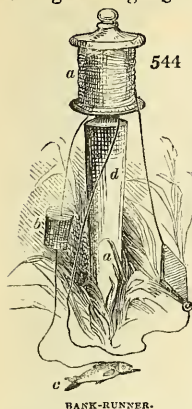


COMMON TRIMMER.

of both the trimmer (*fig. 543.*) and bank-runner is apparent, and is tolerated. Trammelling we think a most unfair practice, and therefore we avoid it altogether; nor are we more favourable to the bow-net, nor indeed to netting of any kind, but on extraordinary and imperative occasions. Mr. Daniel, though an excellent sportsman, as we know, delighted in this wholesale fishing, and, as we have proved in p. 1048., would go any distance

to assist in a general haul. He also advocates the murderous use of the bow-net and hoop-net, which we do not. "In laying hoop-nets," he says, "place them where the water gets tolerably deep from a gravelly scower. All the infallible attractions of brass candlesticks, yellow ribbons, flowers, and looking-glasses, are superseded by the arcanum of encircling a live fish, brought from other waters, in each hoop-net. Whether the old inhabitants approach the stranger out of vengeance or curiosity remains a mystery, but that they will run into the hoop-net to get at him the compiler positively insists on." "It was," he tells us, "a secret which an old game-keeper would not impart until after being in his service many years. Old Jonathan always requested to have the management of the hoop-nets left to himself, and would allow of no assistant; and his plan (the above) always proved successful." Trimmers are usually employed on lakes, meres, and other extensive waters, and consequently, when a trimmer is set with a living fish attached to it, it is cast adrift (*fig. 543.*) on some such water, and consequently a boat is necessary to follow and take it up. When the water in which it is set is difficult of approach by high banks, or other obstructions, then these trimmers can be reached with drag-hooks; or a long line may be shot over the trimmer line. These trimmers are fitted up with thin but very strong cord. The hook employed must be well examined as regards its due temper, for it must neither snap nor bend. It should also be attached to the cord by gimp, and then wound on round the groove in the flat trimmer cork (*a*). The hook, of course, is baited with some lively bait attached by the back fin (*b*), and hangs within a foot or two of the ground, suspended from the cork by means of a slit in the central peg (*c*). The tug of the pike withdraws the line from this confinement, and the voracious animal carries it off to pouch it at his leisure; which having done, it only remains that the man-of-war trimmer, as these kinds are called, be followed by boat, if not otherwise connected with the shore. The bank trimmer is much in use on the lakes of England, the lochs of Scotland, and the large watery expanses of Ireland; and the pursuit of these traps in blustering weather is with many a delectable sport. For ourselves, we neither practise nor advocate them, except on rare occasions. Still, "trahit sua quemque voluptas."

3639. *The bank-runner* (fig. 544.) is also very frequently employed by the destructives among the angling classes at such times as they are manually employed with rod and line.



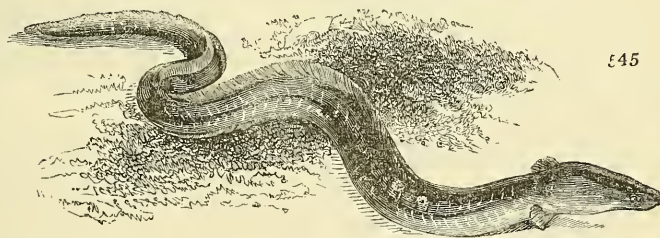
BANK-RUNNER.

The bank-runner, as seen in the cut, is of strong wood, having a movable revolving head grooved and fitted with not less than from fifteen to twenty-five feet of some strong line (a). To the armed end of the line a perforated cork is attached (b), which suspends a minnow, bleak, or gudgeon, according to the judgment of the fisher (c). The runner is fastened into the ground by its staff (d), and thus safely lodged, the bait is put into the water, having been previously kept alive in the minnow-kettle. Occasionally a considerable number of these bank-trimmers are set, consequently they require to be watched, and each visited every hour or two, or the baits will be apt to have been carried among the weeds, or become irretrievably fixed around stumps of trees, &c. &c. If a party be present, it is common for each person to set his own trimmer, and then to bet on his success. Let the trimmer-hook be sufficiently large, and observe that trimmers cannot be set too early; it is also proper to bear in mind, that they should not be left out late in the evening. The pike have then retired and the eels have come abroad, and will make sad havoc among both baits and tackle. Be careful how you endeavour to secure your fish when he has taken it into a mass of weeds, as is common with these gentry. Tear up the weeds in the

course of the line, before you attempt to take up the pike.

3640. *The edible qualities of the pike and jack* are not in very high estimation among us. This fish, however, occasionally graces the boards of the great; formerly it appeared a more frequent and a more highly appreciated guest there. One among other proofs is, that at the famous enthronisation feast of Archbishop Nevil in the year 1466, it formed one of the varieties. We likewise learn, that in the reign of Henry VIII. a pike was sold for double the price of a house-lamb in February, and a pickerel or jack for more than a fat capon. The culinary treatment of these fish is not very much varied: small pike and jack are usually boiled and eaten with parsley and butter. Large pike are stuffed and roasted, or baked: occasionally they are pickled also. The flesh of both is firm and commendable, but very full of small bones, which are forked.

SECT. XXIII. *The common Eel* (*Anguilla vulgaris*).



COMMON EEL.

3641. *The common eel* (*A. vulgaris*, fig. 545.): colour of the dorsal and anal fins uniform; length, from one to three feet; colour, above, dark olive brown, whitish on the belly: in the variety called silver eel, the belly and sides are silvery and sub-translucent. The head is depressed, the lower jaw longest. Eye directly above the gape; irides reddish. Nostrils with two openings on each side; one a simple pore near the eye, the other a tubular wart on the snout. Gill opening immediately in front of the temporal fin. This species spawns in the sea, for which purpose it leaves the lakes and rivers, descending from August to November, and principally in dark stormy nights. The young ones appear on our shores in myriads, making their way up the mouths of rivers. The migrations of eels were first pointed out with accuracy by Redi. (*Opus*, part iii. p. 99. ed. 1729.) Mr. Pennant notices a variety common in the Thames under the name of grigs. These bite readily at the hook, which the common eel will not. They have a larger head, a blunter nose, thicker skin, less fat, and indifferently tasted. They have been known to reach to four pounds in weight, but have seldom been met with beyond it. Other varieties of the eel are likewise found, as the monstrous conger, which we shall not pass over. The agencies of localisation appear to have much influence in establishing other varieties of the eel, but all which are less distinctively marked than those we have noticed. One of these, of a small size, is found in the Nene in Northamptonshire, with a lesser head and narrower mouth than that of the common type. In the Serpentine river in Hyde Park, also, there is a large headed variety:

and it may be noticed as a singular circumstance, that in most standing and muddy waters the common eel becomes large in the head, black on the back, and exhibits a golden colour yellow beneath, instead of the silvery whiteness which characterises the eels of our streams, known among us by the familiar term of the silver eel.

3642. "*The eel*," says Dr. Shaw, "which, in a natural arrangement of the animal world, may be considered as in some degree connecting the fish and serpent tribes together, is a native of almost all the waters of the ancient continent, frequenting not only rivers but stagnant waters, and occasionally salt marshes and lakes: it is even found, in the spring season, in the Baltic and other seas." Universal as its distribution is, it is seldom found in the Danube, though so common in Upper Austria. As a species, it is distinguished by its uniform colours, but more particularly by the peculiar elongation of the lower jaw, which advances to some distance beyond the upper: the head is small and pointed; the nostrils small and cylindric, and at a very small distance from each eye is a kind of additional pair, of a lengthened shape, but not cylindric; the eyes are small, round, and covered by a transparent skin united with the common integument of the body; the opening of the mouth is small, and both jaws and palate are beset with several ranges of small sharp teeth; on each side, both of the upper and under jaw, are observed several minute pores, through which exudes a viscid mucus; the orifices of the gills are very small, of a lunated shape, and are seated close to the pectoral fins, which are small and of an ovate shape; the back fin commences at some distance beyond the head, and is continued into the tail fin, which is also united with the vent fin, the latter being continued as far as the vent, which is situated near the middle of the belly. The general colour of the eel is olive brown on the back, and silvery on the sides and beneath; the fins are slightly tinged with violet, and sometimes margined with pale red; it is however occasionally seen of a very dark colour, with scarcely any silvery tinge, but sometimes yellowish or greenish; those are observed to be most beautiful which inhabit the clearest waters. The skin of the eel is proverbially slippery, being furnished with a large proportion of mucus; it is also covered with small deeply imbedded scales, which are not easily visible in the living animal, but are very conspicuous in the dried skin: their form is a long oval, their colour white, and their texture finely reticular: these scales appear to have been first observed, or at least described, by the celebrated Leuwenhoek, who has figured them with great accuracy and elegance. To obtain these scales, which are curious exemplifications of Nature's works, take a portion of the skin which grows on the side of the eel, and while moist spread it on a piece of glass, that it may dry very smooth; when thus dried, it will appear all over dimpled or pitted by the scales, which lie under a sort of cuticle; this thin skin may be raised with the sharp point of a penknife, together with the scales, which will then easily slip out. It has been asserted, from trials of this nature, that very few fishes, except such as have shells, are destitute of scales. To prepare these scales for examination with the microscope, they should be taken off, if possible, with nippers, and be soaked in water for a day or two, and afterwards carefully rubbed to clear them from the skin and dirt which may adhere to them; they should then be placed on smooth paper, between the leaves of a book, to make them dry flat, and prevent their shrivelling up.

3643. *The common eel is extremely tenacious of life*, and may be kept many hours, or even days, out of water, provided it be placed in a cool situation: it is also well known, that it voluntarily leaves the water at certain periods, and wanders about meadows and moist grounds in quest, as is supposed, of particular food, as snails, &c. but more probably, as we think, it is in search of a new location. Nor is there much reason to doubt but that to this roving disposition we owe the almost certainty of meeting with eels within a twelvemonth after the sinking the site of a pond, provided that any already exist within a reasonable distance.

3644. *The eel has been reputed viviparous*. Dr. Shaw observes on its generation: — "The errors of the ancients, and even some of the moderns, are too absurd to be seriously mentioned in the present enlightened period of science; it appears, however, that both eggs and ready formed young are occasionally observed in the same individuals, as is known to be the case also with several other animals." Many modern observers, and particularly Mr. A. Young, differ from Dr. Shaw, and maintain that the eel is oviparous. He has bred them artificially from spawn. Probably the eel is either oviparous or viviparous according to external circumstances; in some of the higher fishes the young are hatched in the oviduct. "The young ones," as observed by Dr. Fleming, "begin to appear on the shore in March, April, or May, and proceed in myriads towards the mouths of rivers, for the purpose of ascending to the lakes and marshes. In their ascent, where eel fisheries are of value, the young are assisted in surmounting obstacles, such as the barrier of a mill-dam or a cascade, by straw ropes, so placed that the young eels can twist themselves round and reach the summit." The migrations of the eel were first pointed out with accuracy by Redi. (Opus, part iii. p. 99. ed. 1729.)

3645. *The account of the migrations of the eel in the Dee, in Aberdeenshire*, by the Rev.

G. Mack, states that "in the month of June yearly, immense swarms of young eels make a progress from the lower part of the river towards the higher ground, with a quickness and unremitting assiduity that are surprising. The eel, very different from the trout, is a fish that seems to dislike running streams, and therefore avoids that part of the river where the current is strong. This probably had been the circumstance that induced them, in the rapid Dee, to direct their progress only along the edges of the river close to the banks, in a line following the windings of the river often suddenly deflected by stones or other interruptions, without any breach of its continuity. This line having frequently caught my eye, my hand was put into the water to touch the line, with a view to examine what it was; the line became discontinued when my hand approached, but it united again as soon as my hand was withdrawn. This induced a nearer examination; and then I perceived, with astonishment, that this line was formed by a series of small eels, moving forward with great celerity. These eels did not exceed half an inch in length, but were in all respects perfectly formed, like the common eel. The line might perhaps, on an average, consist of from twenty to thirty in breadth; and the individuals being in different degrees of forwardness, and close to each other, made the line uniform. The progress with which they advanced was not less than four miles an hour; and this continued for eight days and nights together, and there was no apparent diminution of it when I left the place. There was a similar line on the opposite side of the river. The water in which they floated at the place were I observed them, was in general about two or three inches deep."

3646. *Eels are, however, prone to migrate by other impulses than those of the reproductive kind. At any time of the year a stormy state of the weather, particularly when accompanied with thunder, will produce a tendency in them to move in vast masses, but it is invariably from the upper part of the stream downwards, which circumstance is well known to millers and fishermen, who at these times take great quantities in their passage by nets, traps, &c. This movement of the eels is intended and instinctive; probably it is done to secrete themselves from the impending storm in the depths of the sea.*

3647. *The torpidity of eels during the winter is asserted and denied with nearly equal force. During severe frosts they certainly retire to deep and muddy bottoms, and in the winter season are seldom found active enough to take a bait: but that they enter into a state of actual torpidity, is very questionable. It is said that if a large wisp of straw be thrown into a pool during the winter, eels will congregate within it, and that they may be drawn up embedded in the straw; but although we do not deny, we cannot vouch for the tale. The eel may be considered as approaching the nature of a crepuscular animal: in the daytime it commonly lies concealed in its hole, which it forms pretty deep beneath the banks, and which is furnished with two outlets in order to facilitate its escape if disturbed; at night it prowls in search of prey.*

3648. *The very general diffusion and plenty of the eel, has made it of much economic importance, but its appreciation has vacillated among different nations and during different epochs. "The Romans," we know, "held it very cheap, probably from its likeness to a snake. It is somewhat singular that the aversion of the Romans to the eel did however not extend to the lamprey, a fish not very dissimilar in its form. We are told that Antonia, the wife of Drusus, possessed a lamprey which she decorated with jewels; that Hortensius wept at the loss of one which he had kept and exceedingly loved; and that Crassus the orator lamented the decease of another."*

3649. *In some parts of Europe, eel fisheries are of great national importance. We are informed by Dr. Bloch, that in some places near the mouth of the Baltic such great quantities are taken, that they cannot be used fresh, but are smoked and salted for sale, and conveyed by waggon-loads into Saxony, Silesia, &c. In Jutland it is said that two thousand have been taken at a single sweep of the net." This fish is supposed to live to a great age, and to be of slow growth. Its general size is from two to three feet, and its weight from two to five or six pounds; sometimes, however, it is much larger: one was taken out of the Kennet, near Newbury, which weighed fifteen pounds. The enormous eels we occasionally read and hear of, are without doubt congers. The common eel is extremely voracious, and most destructive to the spawn and small fry of fish; and Sir John Hawkins has spoken feelingly of their depredations not being confined to the young of fish only, for his broods of ducklings were all secured under water by the large eels with which his canal abounded.*

3650. *"The conger eel differs from the common eel in the following particulars:— Their colour in general is more dark; their eyes much larger in proportion, the irides of a bright silvery colour; the lower jaw is rather shorter than the upper: the side line is broad, whitish, and marked with a row of small spots — Mr. Ray says a double row; the edges of the dorsal and anal fins are black: they have more bones than the common eel, especially along the back quite to the head. As to the distinction that Mr. Ray and other writers make of the small beards at the end of the nose, it ought not to be depended upon, those excrescences being sometimes found in both kinds, and sometimes entirely wanting.*

They grow to a much greater size. Dr. Borlase assures us, that they are sometimes taken near Mounts' Bay of one hundred pounds' weight. Some taken near Scarborough were ten feet and a half long, and eighteen inches in circumference at the thickest part.

3651. *Congers are an article of commerce in Cornwall*, and are exported to Spain and Portugal, particularly to Barcelona. The quantities that were formerly sent from Mounts' Bay for five years were considerable. Mr. Pennant remarks, that a fishery of congers would be of great advantage to the inhabitants of the Hebrides. Perhaps they would at first undertake it with repugnance, from their absurd aversion to the eel kind.

SUBJECT. 1. *Angling for Eels.*

3652. *Angling for eels.* If the edible qualities of the eel were not an attraction, this would be little known and less practised. In our younger days, it is true, when every thing that swam was fair game to us, we pursued eels also; but their twisting and twining around the tackle, and their protracted dying writhings when released from it, disgusted us in the end. We are not however to legislate for all, and as we have known some who devoted much time to snigging, bobbing, and even float-fishing for these slippery gentry, we make no doubt that others will do the same. It is our duty therefore to offer instructions on this head, which we shall commence by telling our friends where to look for them before we show how to catch them.

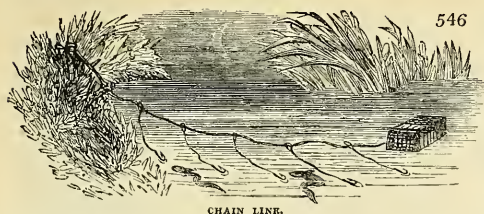
3653. *The haunts of eels during the spring and summer months* are in cavities afforded by roots, stumps, stony masses, and large weed-beds. Where the banks are oozy, they occupy holes in the earth below the surface of the water, having an inlet and often an outlet; they insinuate themselves, also, between planks and floorings under the water, where they are always to be found, as well as in all the depths about bridges, piles, flood-gates, &c. &c. In short, wherever there is an excavation they will creep in and make a hold for themselves to lie in and look out for prey, which, if it comes within reach, they will seize on, even in the day; but their habit is to leave these recesses at night only, when they rove about in search of food.

3654. *Float angling for eels* is sometimes practised with any variety of worm on a No. 6, 7, or 8. hook, mounted on a piece of strong salmon gut — the float is either cork or quill. Let the worm reach the bottom and trail on it; if two hooks and two baits are used, both hooks must reach the ground, one, three, or four inches in advance of the other. Choose for float fishing still deeps, or very gentle currents only, with oozy or sandy bottoms. Strike two or three seconds after your float is drawn under water, and then haul out your prize as quickly as possible, and stop his twisting round the tackle by putting your foot upon him immediately behind the head, then crush it with a blow, or just sever the vertebræ only with a knife, which will enable you to remove the hook by holding the line and snipping the mouth downwards, with a pair of scissors, to the hook, which is often gorged to a considerable distance. No other plan will secure your hook and line. Ground bait is sometimes useful in this fishing, and is made of small pieces of garbage, which are mixed with coarse sand. A tripping worm bait on a well shotted line, with a small barbel wire hook, about No. 8., in dark gloomy weather with an electric state of the atmosphere, will often prove very successful when angling for them in oozy mild currents, towards the sides of weed-beds, and in pools where the water gently eddies round: but this particular practice is less successful when the weather is settled, and in a very bright day it will be found to be useless. This kind of angling will succeed sometimes with eels when pieces of fish, greaves, slugs, and snails, are employed.

3655. *Leger-line fishing for eels* is practised both by day and night; the line in these cases does not differ from the usual leger (p. 1058.) but it is prudent to furnish it with two hooks, one about six inches below the lead, the other about two feet from it; to these latter, two or three shot may be added, within six inches of the hook, to keep it steady if there be a current. If both of these hooks are fitted upon fine gimp, it will not be amiss, as the larger kinds are very dexterous in sawing off either gut or weed: in other respects, Indian weed, when very stout and good, makes an excellent eel line. When leger-line fishing is practised in the deeps of rivers, in meres, lakes, in harbours, and in tide waters at the sides of the currents, then strong tackle should be used, as there the largest eels are often taken, and nothing less than gimp should be employed.

3656. *Night fishing with a leger-line* is a very killing practice, and in gloomy weather portentous of thunder, is often remarkably successful with those who are inclined to tempt the night dews. The professed eel fishers carry a lantern that they may be enabled to bait their hooks; a dark lantern is the most proper, that the light may be brought to shine solely on the bait when wanted, but not to make a glare in the water, as too much dependence must not be placed on the voracity of the eel, for he is not less wary than voracious. Mr. Salter recommends that the leger-line be fitted up with a yard and a half of fine gimp looped at each end; to one of which attach a hook, No. 7., and a leger-lead secured in its place by a shot. On this hook put a small lob or a large marsh-worm, and drop it into the stream. If a float be used, the current will carry the bait away.

3657. *Chain or night lines*, as some call them, are frequently used in eel fishing. The chain line is made either of strong trolling line, or of whipcord (see *fig. 546.*). Make it fast



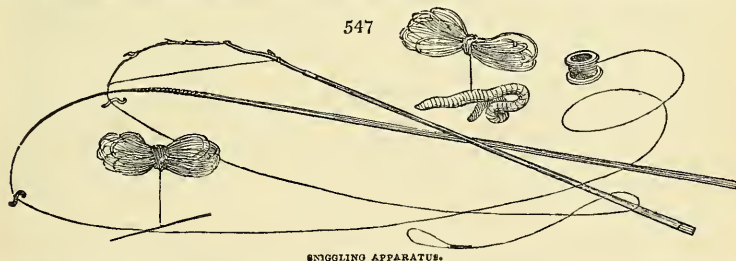
by one end to any firm substance, and let the other be fastened to a strong wooden peg; now attach eel-hooks with tics, bought for the purpose, about half a yard apart the whole length of the line. If the water be deep, or the angler object to putting the peg into the water by hand, let him use a pole, which he can push down from a punt or a bank, and by the same

means he can draw up his tackle and his prey also. This mode we have found even more effective sometimes than using the paternoster line (figured and described, p. 976.). The best bait for a night line having a single hook is a dead loach or gudgeon.

3658. *Living fish baits* are certainly the best for this variety of angling, and among these lampreys are to be preferred; next to them are minnows, roaches, and bull-heads. Where the eels run very large, small gudgeons may be used to advantage. Lob-worms are also good baits; likewise greaves, chickens' entrails, and pieces of eels. In tideways, muscles, cockles, and periwinkles are employed. Eels have been taken with shrimps also; and shell-fish bait, being tenacious on the hook, are peculiarly advantageous where the water flows rapidly. When two or more hooks are used, bait with two varieties, and let the farthest from the lead be a dead bait and the other a live one. Fish always with good tackle, as this angling often takes heavy fish of other kinds, as trout, chub, or carp; jack and pike have also been thus taken.

3659. *When a bite occurs* be not in a hurry to strike, or the eel will abandon the bait; and no danger can arise from giving a little time, as this fish seldom leaves a bait if undisturbed, but gradually takes the whole in. It is deliberation, and a gradual adaptation of the bait to their mouth and throat, that makes them so frequently strip a large worm up the hook, until they get a loose end, when they will slowly unhook the whole of it, and make off. Two rods may be readily employed in this fishing, by having one in each hand, or one on the ground, side of a boat, &c. &c.; and where the angler has enterprise enough to risk his health, and deprive himself of his rest for this sport, he deserves it, and every advantage is fair to insure success.

3660. *Sniggling for eels* (*fig. 547.*) is a practice so ingenious and full of artifice, that it might reconcile the sportsman even to eel fishing. Every boy almost who lives within the



sight of an eel river can sniggle, which ill accords with this account of it: but let any one accompany the true eel sniggler in search of his material to the fishing-tackle shops, where the fisher is fitted to his mind with a well contrived set of machinery, expressly adapted for this hole and corner work; let him finish by witnessing the application of it to the taking of a few eels, by a writ served on them within the recesses of their dwelling, and he will then agree that this, like every other pursuit, however trifling, can be made interesting when improved by art. Mr. Salter, with the professional ardour of a true London angler, has entered into an elaborate description of the most improved apparatus for the purpose, which he has done with a minuteness of detail that not only evinces his own proficiency as a *sniggler*, but shows how much he was interested in making others equally so; and we should be robbing this excellent practical writer of his just due, if we did not own that our figure and our description of the apparatus and practice concerned in eel sniggling, are indebted to him for their principal value.

3661. *The more common country practice of sniggling* is thus characterised:—A stick a yard long with a cleft at each end, a strong needle whipped to a small whipcord line from the eye to the middle, which, with a lob-worm stuck on the needle, leaving the point to be inserted in the cleft of the stick, constitutes the simple apparatus. The art consists in putting the worm, needle, and line, softly into the mouth of the eel holes, which are suffered to remain until taken by the eel, when the line and hook are again reclaimed, but

accompanied by the eel also. This outline forms the *Boylsh* practice we have hinted at; and we now proceed to the more improved methods pursued by the regular eel fisher.

3662. *The snigglng rod*, instead of being one yard long, ought to be two, or two and a half in length. Two joints of the hazel rod, commonly made up for the purchase of youths, form one of the best roots, being light and tough; but Mr. Salter's recommendation is two yards of stiff bamboo. To such a root, or rod, a top must be fixed; and it is essential that it be flexible, and likewise that it remain flexed or bent at any angle or segment desired. In the common method this intention is imperfectly fulfilled, by means of a branch of willow or hazel, which, being first bent to the required position, is then tied by means of a cord extending from the point to the middle of the rod (*a*, *fig. 547.*). An improvement is now made in this by substituting for this top half a yard of stout bell-wire (*b*, *fig. 547.*), which requires no tying, and can be bent and unbent at pleasure. The crack fisher however is often furnished with a top expressly manufactured for the purpose by the best rod-makers from three pieces of hickory, each of five inches' length, the ends of which are united to each other by two hinges, similar to those used in the making of carpenters' rules, by which they can be bent to any angle required. It must be notorious to those conversant with London anglers, that great pains are taken by them, and other piscatory amateurs of metropolitan towns, to make their tackle portable, as well as effective; and if it can be hidden, that too is a still greater recommendation. The snigglng apparatus, be it observed, may be readily formed on these principles. The rod may be made of two telescope joints, one of which may slide into the other, leaving room to receive the wire also, if the top be of that material. If it be the folding brass jointed article just described, that will enter the pocket, or even the pocket book, and the whole will then appear as a walking stick only.

3663. *The line employed is not attached to the rod*, but is held in the hand of the angler, either loose or wound: if the latter, the common thumb-winder is often used for the purpose, and the material is sometimes fine whipcord; but a stout platted line is much superior. To the unattached end of this line either a stout hook, of No. 4 or 5., or, what is much to be preferred, a glover's or tailor's button-needle, of about two inches in length (*c*), with its extreme point broken off, is whipped with some silk, waxed with shoemaker's wax, first laying the end of the line nearly half-way down the needle, within a quarter of an inch of the eye or thick end, and tying it strongly on, the line will then hang from about the middle of the needle, leaving the smaller end quite bare, and also a quarter of an inch of the larger.

3664. *To bait the needle*, enter the thick end thereof into the worm, near the tail, and carry it down near to the head; then draw the worm as much back as will completely cover the needle; the line will then hang from the tail, and the head will be presented to the eel.

3665. *To apply the bait to the suspected resort of the eel*, put the tail end of the worm a little way in the point of the rod, whether of wire, wood, &c. and thus convey the head end of the worm just within the mouth of a hole in a bank, or into a crevice between piles, or any opening between large stones, allowing as much line to unwind as will suffice for the placing of the worm. This being done, a little time only will elapse, when, if an eel disposed to take a bait be present, a gentle tug will be felt, sufficient to detach the worm from the rod, on which it of course cannot be too lightly placed, so that it can be carried to the eel hole. When a wire top is used, tie around it, at half an inch from the extremity, a whipping of silk, to prevent the worm from being penetrated too far. It is also of consequence that the worms used be tough by good scouring, otherwise they will break to pieces in baiting with them. Some fishers prefer presenting the tail end of the worm to the eel, and some the head; but this we believe is not material. When a minute or two has been allowed, the bait may be supposed to be gorged, when by striking smartly the needle will fix itself across the throat of the eel. To draw the eel forth, it is requisite that a certain degree of force be used, and a certain degree only; for if the line be violently pulled, the tackle will probably give way, or the eel may be ripped open, and the hook return empty to the hand; but if a moderate strain is kept on the line, the eel will become at length tired; it will then cease to resist, and may be drawn out and landed. We would refer the snigglng to Mr. Salter, to whom we also are under obligations on this subject, having never practised it to any extent or with much success.

3666. *A simple apparatus for the purpose* also may be manufactured by the angler on the spur of the moment. "Use the two upper joints of a strong top rod, or a long slender hazel stick; slip a small quill over the taper end, leaving the extreme end of the quill whole; a tailor's button-needle, or a stocking-needle not more than two inches long, is also requisite, and a piece of hard twisted or fine whipcord for the line." (*Boulker.*)

3667. *Bobbing for eels* is treated on by Mr. Daniel much after the following manner, but he appears to confine himself principally to a boat, whereas we have witnessed much success in this fishing from the river banks:—Take a quantity of well scoured lob-worms; have ready a long needle, with three lengths of worsted slightly twisted together; put the needle lengthways through the worms, and draw them down on the worsted; when two yards are thus prepared, fold them up in links, and tie them to about two yards of good twine. Having made a knot on it eight inches from the worms, slip a piece of lead with a hole in it (weighing from a quarter to three-quarters of a pound, according to the current fished in) down the line to the knot; fasten the line so armed to a manageable pole, and let the lead lie on the bottom in thick muddy water when the tide runs up strong, or near the mouth of some river. When the eels nibble at the bait, they can be felt; give some little time before it is pulled up, which must be gently until near the surface, and then hoist out quickly: the worsted sticking in the eel's teeth prevents their loosening themselves until the line is slackened by throwing them into the boat or on the ground; as soon as they are disentangled, cast the bait in again: frequently great quantities are thus caught, especially of greys. Eels are in many rivers snared in wicker pots.

3668. *Eel spearing* (fig. 548.) is practised by many persons for pleasure even, although to be half-way up the legs and thighs in ooze and mud would not appear delectable in the eyes of many. We, however, knew a very keen angler who would leave off fishing in the midst of his sport to undertake to spear some eels for a miller, from whose running ponds he used to extract largely of trout, perch, jack, roach, and dace, but which amusement he readily abandoned for eel spearing. To the surprise of every one who witnessed his exertions, now up the brook feeders, almost mid-deep in ooze and mud, he plunged in his eel-spear, and so doing, ever and anon, was heard a lusty hurrah, and next was seen spear uplifted, and bearing sometimes one and sometimes two eels fast clenched between the iron jaws of the instrument, but writhing and struggling to free themselves from a grasp too firm to give way to their exertions. Extraordinary as it may appear, on one occasion, when striking deep into the side of the bank which circumvallated the water, he felt a more violent momentary struggle than usual: he had struck an otter in his couch, and so disabled him as to make his



destruction inevitable, much to the miller's satisfaction, who had long been a serious loser in his poultry, and who had in vain attempted to discover how his losses were effected, more particularly in his ducks and geese, the young of which were continually missing.

3669. *Angling for conger eels* is likewise practised near the coasts, and in docks, harbours, &c. Both the sea and the earth-worm are used as baits for them. In a small stone basin, at Torquay, in Devonshire, into which the coasting vessels are received, fishing for congers is very generally practised from the stone piers which surround it, by means of a strong hook, a powerful line, and a lob-worm.

3670. *Of the edible qualities of eels* little need be said; the thousands who eat of them are living proofs that they are not unpleasant. As regards their culinary preparation, we were going to omit all mention of it even, but the naiads of the Thames might give us a duck-vent the next time we ventured there, did we not laud the eel pies baked on its aits, or the spit-chucked dishes of them dressed, and dearly charged for at some of the hotels which skirt its banks. The latter part of the banquet, we suspect, has pallied the appetite of many a visitor, else well pleased.

SECT. XXIV. *The Flounder* (*Pleuronectes flexus* Linn.)

3671. *The flounder, or fluke.* *Pleuronectes flexus, oculis dextris, lineâ laterali asperâ, spinulis ad pinnas.* (Linn. Syst. Nat. p. 457.)

3672. In our anatomical and physiological examination of fishes, it may be remembered that we described, as one of the distinguishing features of this class of fishes, the dextral situation of the eyes. A sinistral variety however, or one where the eyes are found on the left surface, sometimes occurs. Flounders are diffused over the Northern and the Mediterranean seas; and around the British coasts they are very numerous, as well as in all the rivers that communicate with them. It is at the mouths of these that they naturalise themselves, increase greatly in size, and become very numerous. "They will likewise," says Mr. Daniel, "live in ponds, and are a profitable fish to stock them with, as they soon get fat, will live many hours out of their element, and, consequently, may be easily and safely removed; but they will not breed, nor will they live above seven or eight years when confined in standing waters." Mr. Daniel might have added, that they delight to live where there are sandy bottoms and gravelly banks, and can only be said really to thrive in such ponds as present these characters, and also have a stream running through them. "The colour of the upper part of the body is a pale brown, sometimes marked with a few spots of dirty yellow; the belly is white; and it may readily be distinguished from the plaice, or any other fish of this genus, by a row of sharp small spines that surround its upper sides, and are placed just at the juncture of the fins with the body; another row marks the side line, and runs half-way down the back. Mr. Pennant mentions hearing of one that weighed six pounds, but a flounder of half that weight is not common." Captain Williamson says, "this fish delights in a soft, flat, or gently declining bottom, where they will take various baits, but principally well scoured worms and greaves. You will have but little sport unless the place be previously baited, for they are remarkably indolent; though when once assembled, no fish can keep the angler better employed. Use strong gut, with a hook, No. 7 or 8., rather stiff in its make; put four or five shots on your line, and let your bait go close to the bottom or lie upon it; give a little time when you have a bite, for the flounder is a great glutton, and will, if possible, gorge your bait, provided he be not disturbed."

3673. *The Thames flounders* are considered as singularly sweet and firm, and are met with by the angler in the creeks from Blackwall to Bromley, Stratford, and West Ham, as well as in and about the docks at Limehouse. At the entrance, and even beyond the tideways, they are also to be found in all our rivers communicating directly with the sea; in some of which they are found large, and must be fished for with correspondingly strong tackle. Flounders spawn in May and June, but they may be angled for at all seasons; for although, like other fish, they feel the reproductive process, yet they are at no time so much out of condition

as to be unfit for the table, nor so enervated as not to yield sport to such persons as indulge in this kind of fishing. In large rivers and estuaries they are caught with dead lines; and in milder streams they are taken likewise with line and float in the same manner, and with the same baits, as eels. In fact, these fishes are frequently caught together; and when a multiplicity of hooks are used, it is not uncommon to find one occupied by a flounder, and another by an eel.

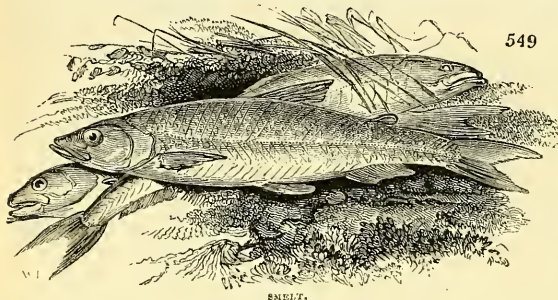
3674. *On flounder angling* Mr. Daniel observes, that "they bite freely at all hours of the day, but particularly on the rise of the water by flood or tide, and in warm weather, with a little wind, and are to be fished for with a strong line, and good gut at the bottom, as some of them are large, and struggle much: the best places to angle for them are by the sides, and at the tails, of deep streams, where the bottom consists of fine gravel, sand, or loam, or in still places of the same quality near the banks: two or three rods may be used, with a bullet on the lines, to lie on the ground in the streams; and when in still water, a shot or two on the line, and the hook small. Brandings that are taken from rotten tan, well scoured, are the best baits; they will take the lob-worm, and even the minnow: a flounder, weighing twenty-three ounces, was caught in 1799 with the minnow."

SECT. XXV. *The Smelt (Salmo eperlanus Linn.)*

3675. *Salmo eperlanus. S. argentus, subcæruleo-virescens, capite diaphano, radiis pinnæ ani septemdecim.* (Linn. Syst. Nat. p. 511.) *Osmerus eperlanus* (Cuvier, R. A. ii. 305.)

3676. *Dr. Shaw informs us* that there appear two varieties of the smelt, one not exceeding the length of three or four inches, the other arriving at the general length of six, eight, or

nine inches, and sometimes even attaining twelve or thirteen. The larger variety (fig. 549.) seems to be that so frequently seen about the British coasts, which is distinguished by Dr. Bloch under the name of *Eperlano marinus*, or sea smelt. From Pennant we learn that it derives its name from having, in the opinion of some, the scent of a violet; in the opinion of others, that of a cucum-



ber; and so strange is the disagreement respecting the smell of this fish, that the Germans (says Mr. Pennant) distinguish it by the very elegant title of the *stinch fish*. The name of *sparkling*, which it bears in Wales and in the North of England, is taken from the French *eperlan*. They are met with throughout the year in the seas that wash our coasts, and seldom go far from shore, except when they ascend the rivers, which they do with the tide; and in certain rivers it is remarked that they appear a long time before they spawn, being taken in abundance in the Thames and Dee in November and the two succeeding months, in other rivers not until February. In March and April they spawn, and are very prolific; after which they all return to the salt water, and are not seen again in the rivers until next season. It has been observed, that they never come into the Mersey so long as there is any snow water in its current; and that in the spring and beginning of summer they will run farther up than in the decline of the year: they are also to be met with in the docks that are opened for the reception of ships.

3677. *As regards the season for smelts*, Mr. Salter says, that "though they arrive twice every year in the Thames, March and July, yet they do not get above London Bridge in their last visit." On the change which has taken place in their migration, Mr. Salter feelingly observes, "When they arrive, if the season be favourable for the fishermen to work their nets, they then take, or used to take, an immense quantity of them, which enables the poor fisherman to discharge some of the debts he unavoidably contracts in winter, in consequence of his not being able to labour in his vocation. Between London Bridge and Lambeth was the principal place for taking smelts in nets; but for the last twenty years past these poor fishermen have been deprived of their resource for paying off the debts of winter, by the smelts not making their annual appearance in the river Thames, previous to the time above alluded to. The river formerly swarmed with this delicious fish. In July we used to begin angling for smelts in the various wet docks below bridge; but the spot covered by the floating timber, at Limehouse Hole, was a favourite resort for smelt fishing: from these timbers a hundred dozen have frequently been taken in a day. Then, again, Perry's Dock, Blackwall, now belonging to the East India Company; what a place for smelts in those days! I have made much inquiry on the subject of the smelts not visiting, as usual, the river Thames, but without any satisfactory results." They still visit the Thames, but it is below Woolwich, and of course it is impossible to angle for them down-river.

3678. *The smelt is of a very beautiful form and colour*; the head is transparent, and the skin in general so thin, that with a good microscope the circulation of its blood may be seen; the irides are silvery, the pupil of a full black; the under jaw is rather prominent; in the front of the upper are four large teeth, those in the sides of both are small; in the roof of the mouth are two rows, and on the tongue two others, of large teeth; the colour of the back is whitish, with a cast of green, beneath which is varied with blue, and then succeeds a beautiful gloss of a silvery hue; the scales are small, and readily drop off; the tail is forked; the flesh is tender and of a delicate taste. These fish vary greatly in size. The largest Mr. P. ever heard of

was thirteen inches long, and weighed half a pound: they used to be sold in the London streets by the name of dried sparlings, being split and dried; and were recommended by the gentlemen who *took their gills* (not fish-gills, reader,) of a morning, as adding to the spirit a particular relish.

SUBJECT. 1. *Angling for Smelts.*

3679. *Angling for smelts* was, according to Mr. Salter, a very delightful amusement some years ago; but it would seem that the mania of emigration has extended itself from man to the animals around him: thus it is that this and other species of the salmon genus seek other shores; and it is done by both from a parity of causes: the former is starved out, the latter is hunted out. Smelts are however yet to be met with in considerable quantities in the mouths of many of our rivers, estuaries, and harbours; and are usually fished for with a paternoster line, which should be fitted up with bristle (p. 976.). Captain Williamson observes, that "smelts never stray far from salt water, or at least from where it is a little brackish: thus they come in with the flood, especially during spring tides, and return with the ebb. They are fond of deep holes, and when the tide is nearly full, may be caught with a stout minnow line (or a very delicate paternoster) in such places. They vary in their depth of swimming, but in general lie about seven or eight feet from the surface, and still lower in very deep water. If fresh raw shrimps can be had, or small pieces of raw lobster or crab, they will prove very superior baits." Mr. Salter directs that in this angling there be a strong flexible top to the rod, strong gut line, heavy float, and from ten to twelve or more hooks, eight or nine inches apart; size of the hooks, No. 8 or 9.

3680. *The baits for smelts are various*: the best appears to be a small shrimp, or part of a large one; small pieces of an eel will lure them, and the belly parts are thought to be the best. We have taken them with grigs and loaches also. Gentles they are likewise fond of, and when other baits fail, small parts of their fellow smelts will answer the purpose. Boiled shrimps are sometimes used with success, and occasionally nothing is found better than red worms. Mr. Daniel recommends bread crumbs to be used as a groundbait, and Capt. Williamson prescribes that oatmeal or raspings be thrown in to keep them together. In float angling it is to be observed, that when smelts bite, they force the float up instead of drawing it down, at which time the angler is directed to strike immediately and forcibly. As smelts are found in very deep waters, they are often angled for without float; but instead of it a long paternoster line is used, and a dip-lead, which is allowed to rest on the ground, occasionally however rising and sinking it. In this way great numbers used to be taken by the London anglers off the ships' sides in the wet docks, and from the floating timber in the Thames; they were also to be caught in the canal which intersects the Isle of Dogs. When a dip-lead is employed, where the water is very deep, the object used by some anglers to signify when there is a bite, is a morsel of white feather placed on the top of the rod. Smelt angling is best practised early and late, particularly in the summer months. The season for it is from the middle of June until the end of November; some even fish for them until they disappear in the middle of March, on their migration to the depths of the sea for the purpose of spawning, from which they return in about two months.

SECT. XXVI. *The Grey Mullet (Mugil capito Cuvier.)*

3681. *Silvery grey mullet*, with dusky back, and sides striped with longitudinal blackish lines. (Shaw.) *M. pinna dorsali anteriore quinque radiata.* (Linn. Syst. Nat. p. 520.) The mullet is so commonly found in all our books as a fish of passage, and one of the objects of the angler's pursuit, that in obedience to the tyrant custom we introduce it here, though against our own judgment, which dictates to us that its more appropriate situation would be among sea fish and sea fishings; for, except on some coasting vicinities, not many anglers know more than the name of the mullet.

3682. *The Mugil, or mugilis*, of the ancient Romans is particularly common in the Mediterranean and Northern seas, and is found in occasional plenty on our southern and southwestern coast, entering the sandy bays and rivers of the shores with the tide during the summer months until September. They are evidently in search of food, which they obtain by rooting up the ground in quest of the marine worms and insects which there abound; and this they do with so much violence, as to leave traces of it in the mud and sand. They never remain in these situations, but return to the sea with the ebbing tide. If Captain Williamson be correct, and there is no reason to suspect the contrary, they are not forced to this return by any inability to remain in fresh water, for he asserts that they are found in the Ganges even as high as its source. "They are something like the dace in shape, yet much thicker; the head is almost square and flat on the top, the nose blunt, and lips thick; they have no teeth, only the upper lip is a little rough, as is also the tongue; between the eyes and mouth is a hard callus; the pupil of the eye is black, encircled with a small silvery line; the colour of the back is dusky, varied with green and blue; the sides silvery, marked with broad dusky parallel lines reaching from head to tail, which is much forked; the scales are large and deciduous, and are also upon the covers of the gills and head, and extend as far as the nostrils. The largest of them are nearly half a yard long, and the flesh is excellent."

3683. *It appears the red mullet (Mullus surmuletus, Linn.)*, when the luxury of Rome was at its height, held a conspicuous place in their entertainments; and for these, according to Juvenal, enormous prices were occasionally given. "Six thousand pieces for a mullet gave," is part of a poetical quotation we have elsewhere had occasion to introduce in proof of ancient luxury. Seneca, however, says that the mullet was not worth a farthing, except it died in the very hand of the guest. It was not unusual for a Roman to say, "In

other matters I may confide in you, but in a thing of this moment, it is not consistent with my prudence; I will trust nothing but my own eyes; bring the fish hither, let me see him breathe his last." Such was the luxury of the times, that there were stews even in the eating-rooms, so that the fish could at once be brought from beneath the table and placed upon it, where the mullets were put in transparent vases, that when expiring, the changes of their rich colour might entertain the company, who all agreed that nothing was more beautiful than a dying mullet. Apicius had the art of preparing them for the table still more luxuriously, by suffocating them in the exquisite Carthaginian pickle, and afterwards procuring a rich sauce from their livers."

3684. *The salacity of the mullet* was an object of peculiar notice among the ancients, and Gesner (*De Piscibus*) notices that the male will pursue the female even after she is captured till drawn on shore. This propensity probably gave rise to a barbarity which, however tolerated by custom, we cannot suppose could have been sanctioned by laws even in those times of singular retributive justice. Juvenal and Horace allude to it as practised both by the Athenians and Romans, among the various modes which rage dictated to an injured spouse to revenge himself on his dishonourer.

"Necat hic ferro, secat ille cruentis
Verberibus; quosdam mœchos et mugillis intrat."

Juv. Sat. x. 316.

3685. *Angling for the grey mullet* is practised with the lug, lurgan, or sea-worm, either with a leger-line or with a float, strong line, and a barbel wire hook, No. 6 or 7. They will also take earth-worms in all their varieties, particularly the red; and it is said the blood-worm is likewise very attractive to them at times; but on this point we have no experience of our own. Whatever worm is used, the hook should be well covered, and have but little of it hanging loose, or they will suck it off; and when gentles are employed, which bait they sometimes take very well, put four or five on a hook, No. 8. Worms and gentles succeed best with them when the water is a little discoloured by either the rising or falling tide, particularly the former. With a float, fish with two hooks, sink the first to within six inches of the bottom, and the second eighteen inches above the first. It is necessary that all the tackle, rod, line, and hooks be strong; for these fish struggle violently. Of course they are seldom fished for but from a boat, particularly with a ground bait; a fly sometimes is used from the shore. Oysters are good baits.

3686. *Fly-fishing for the grey mullet* answers best when the tide is flowing in, and before the water thickens at all: at these times the mullet are very sportive, and swim in large shoals, and an hour or an hour and a half's excellent sport is often gained with almost any moderate sized fly; but in this respect they are capricious, and a variety of flies should be carried, both as to size and colour. We have known them one day take nothing but a palmer, and a second the smallest winged flies. A pair of wings on a hook No. 5., with its barb covered by a bright gentle, will often prove killing. Some anglers use the natural fly, particularly the large house-fly; while the tipula, or harry-long-legs, is preferred to others. Both of these methods of taking mullet are practised along the whole stretch of the Sussex, Hampshire, and Devonshire coasts, in most of the creeks, bays, and rivers, where a sandy bottom affords a harbour for the lurgan, and other sea insects. As the tide ebbs, again attack them by bottom fishing.

CHAPTER X.

FLY-FISHING.

3687. *In whatever point of view we regard fly-fishing*, its superiority over every other method of angling is striking, and universally acknowledged; neither are we inclined to believe that the most ardent lover of the float or ground practice, could make more than a feeble stand in attempting a comparison between them. We are willing to allow that the one is more universal in its application than the other, there being but few fish that may not be tempted by some variety of bait under the water, while there are many that cannot be taken on its surface. Nay, we will concede that there are many more days in the year in which the bottom fisher may exercise his skill with better prospect of success, than the most judicious and persevering thrower of the fly could reckon on. Yet the skill required in the formation of the imitative baits, and the innumerable little niceties which are afterwards necessary to show them in the most natural and tempting manner to creatures not more voracious than wary, being duly considered, must give to the fly-fisher's pursuit the palm of intellectual superiority and more refined exertions. As regards bodily health also, the constant motion may be supposed to improve it in fly-fishing; while the more sedentary character of bottom fishing sometimes proves injurious to it. The greater cleanliness of the fly-fishing practice is likewise very much in its favour with many persons.

3688. *Is the fly bait offered to the notice of the fishes necessarily a just representation of any individual living insect which it is known that fishes seek and devour? or do they take*

any thing that has the semblance of living matter? This question may excite surprise among some of our readers; but if we believe the Scottish anglers, the flies which capture salmon and trout are not necessarily imitations of any existing insects, winged or otherwise; and this opinion is so strongly maintained by some of the best fishers there, and by the best naturalists also, that it does not become us too lightly to condemn it; at the same time we should by no means recommend our readers to adopt it, without much farther observation and close attention to the effects which followed both the imitative and the non-imitative practice. If Professor Wilson, who warmly advocates the inefficacy of all such imitations, be not mistaken, then he never gave so fatal a blow to an art he affects to be enamoured with, and one he so zealously pursues, as when speaking of the artificial fly, he says, that "the fish are deceived by an appearance of life and motion, rather than by a specific resemblance to any thing which they had previously been in the habit of capturing. The accomplished angler does not condescend to imitate specifically, and in a servile manner, the detail of things; he attends, or ought to attend, only to the great and invariable ideas which are inherent in universal nature. He throws his fly lightly and with elegance on the surface of the glittering waters, because he knows that an insect, with outspread gauzy wings, would so fall: but he does not imitate (or, if he does so, his practice proceeds upon an erroneous principle), either in the air or in his favourite element, the flight or the motion of a particular species, because he also knows that trout are not very conversant in the peculiarities of species, and that their omnivorous propensities induce them, when inclined for food, to rise with equal eagerness at every minute thing which creepeth upon the earth, or swimmeth in the waters. On this fact he generalises — and this is the philosophy of fishing." (*Encyclopædia Britannica*, art. ANGLING.) This opinion is every day gaining ground in the North, and without any improper bias to our own long settled opinions, let us examine the rationale of the matter a little further, for the advocates are neither few nor contemptible. Professor Rennie tells us, that "the aim of the angler ought to be to have his artificial fly calculated, by its form and colours, to attract the notice of the fish; in which case he has a much greater chance of success than by making the greatest efforts to imitate any particular species of fly." But let the angler still hesitate before he gives up his opinion even to such authorities as these. If he adopt these principles, he at once gives up all claim to invention and intellectuality in his occupation. We however think we can do something towards unravelling this discrepancy of opinion. How very seldom have we found such opinion to take root in the practised trout fisher of England; and may we not account for that by our knowledge that the object of his pursuit is indigenous to fresh waters only, and consequently seeks both above and below such waters the natural edible living objects which surround him, as fishes and insects in all their varieties, and under all their transformations. Now we have to remark, that salmon do not always feed in fresh water, nor do they reside constantly in it, and as their feeding grounds are in the sea and their food small fish, they are not used to winged insect baits. If this be taken into consideration, it will account for the erroneous opinions of those who affect to consider that any striking matter represented will raise trout, and hook them. Would the tipula be as really taken by trout during the May-fly season in mistake for that fly? We need not answer this question; and if this be the case, and the assertion true, that "any insect with gauzy wings will as readily attract as the ephemera," then indeed our practice has been bad, and our instructions erroneous. Bainbridge, we conceive, was of a similar opinion when speaking of a fly (but be it remembered it was of a *fancy* fly), for salmon, he said, "However fanciful or varied in shade or materials, it will frequently raise fish when all the imitations of nature have proved unsuccessful: indeed, so fastidious and whimsical are the salmon at times, that the more brilliant and extravagant the fly, the more certain is the angler of diversion."

3689. *Sir Humphry Davy* says, "I imagine salmon take the gaudy fly, with its blue king-fisher and golden pheasant's feathers, for a *small fish*!" Brother piscator, if this doctrine apply to trout also, then you and ourselves must have been dolts indeed to expend our time, our labour, and our money, in forming critical likenesses of innumerable varieties of flies to no purpose, when half a dozen balls of worsted, or even old ravellings of striking colours, wrapped around a hook, would have answered our purpose to the full as well as our elaborate dressings, our critical buskings, and our accurate types of the various flies as they make their sessional appearance. If the coldness of the Scotch climate will not produce insects, then both salmon and trout must take what they can get, and they may rise even to a crude bunch of worsted from an old stocking; but let you and ourselves as southrons dress our mimic representations after the real insect, if we mean to deserve the character of accomplished fly-fishers. Nevertheless, we thus write with all due deference to Professor Wilson, who was well known to be a profound philosopher, an accomplished naturalist, and a first-rate fisherman. We lament, however, that some of the best fishers in Scotland hold all entomology and the imitation of particular flies cheap. A writer in *Blackwood's Magazine* says, that "the success of the fisher does not depend upon any selected flies, and is scarcely in any way connected with the resemblance of what subsists

between his fly and the natural one, in imitation of which it may have been formed. On the contrary, a fish seizes upon an artificial fly as upon an insect, or moving thing *sui generis*, not on account of its exact resemblance to any accustomed and familiar object." This writer instances dragon-flies, which, although they catch fish, and are called dragon flies, are as various as possible, and as gaudy as different colours can make them, and are as readily taken by fish in the conclusion of winter and early spring, before any fly of the kind makes its appearance: he thinks, also, that borne down the stream they cannot represent the fly in its natural state. "What, at such times," he asks, "does the palmer, or half the killing flies represent?" We also ask, "Is this argument?" Has not the keen-eyed fish the power of recognising the fly when borne down the stream, as well as when dancing in the air? As regards the capture of trout, we need not insist on the effect which insect food has on their nouriture. An experiment judiciously conducted, purposely to settle the point of the most nutritive food for trout, proved that when fed on flies only they increased in size rapidly. The opinions of Professor Wilson and Sir H. Davy, which we have quoted, are not held of much value amongst practical anglers. Salmon in fresh water will take the smallest living fly, and we have killed them with a natural fly as small as the March-brown. They take artificial flies for flies, and not for birds.

SECT. I. *The Manufacture of Artificial Flies.*

3690. *The most common observation of winged insects*, when within the reach of fishes, will convince us that they are, on every suitable occasion, greedily devoured by many of the finny race; and it would seem, therefore, to follow as a matter of course, that they would prove most eligible baits in the hand of the angler to ensnare them with. It however happens, that although we do take fish in many instances in great numbers with the living insects themselves, yet so much inconvenience attends the operation of *natural fly-fishing*, that with these alone the practice would never become, as at present, popular and fascinating. The insects themselves are by no means always easy to be obtained; and when they are taken, and hooks are baited with them, there is very great difficulty in retaining them on the hooks, however well placed. Insects, therefore, not only require to be continually renewed, but under no circumstance can we cast them beyond the margin of the water; submerge them, and they are either lost or useless. The manufacture, therefore, of such accurate artificial representations of them as can readily deceive the fish and lessen the difficulties of the angler, originated from these inconveniences. Winged insects, in angling language, are all comprehended under the general term of *natural flies*; the imitations of them are called *artificial flies*: and it is therefore evident, that on the fidelity with which the natural insect is represented, the success of the practice of *artificial fly-fishing* must principally depend. It is also our most decided opinion, that *fly-dressing* and *fly-fishing* are so closely connected, that it is not possible to separate them without mutual disadvantage; and thus, while we should hesitate to purchase flies of any dresser who was not likewise a fly-fisher, so we are unwilling to allow that any fly-thrower, however good, can be wholly successful, or entirely deserving the character of an accomplished fly-fisher, unless he can manufacture his own flies, and that with dexterity and correctness. We venture to hope that the candid angler, who will travel with us throughout our detail, will be fully sensible of the justice of these our assertions. Some however have attempted to prove (and we allow that a hasty or superficial view of the subject might seem to favour the opinion), that the qualification of fly-dressing is not essentially requisite to the practice of fly-angling. It is not uncommon even to hear it asserted, that the art of fly-making is totally unnecessary to a fly-fisher, as all the flies that are wanting can be readily purchased, and of much better make than those manufactured by the amateur. We however do conceive, that this is in a great degree erroneous, although not to be wondered at, when so stated by persons interested in the subject. Be it however remembered, we are not prepared to deny, but to admit, that the art of fly-dressing, as it is termed, is now carried to an extreme nicety of workmanship, and to great fidelity of representation in the type to the original. For twenty years we made our own flies, and during that time we were very successful, and consequently were not a little prejudiced against all flies made by tackle-makers. Experience has, however, taught us better. It is true that even now, when "the sear and yellow leaf" encircles our brow, we should not think ourselves equipped for the river without the means of imitating any unusual fly which we found exciting the fish of any particular district. It is at such a time that skilfulness in fly-dressing well becomes the fly-fisher, for being ready at imitation, and well provided with the means, he sits down, and in ten minutes he is furnished with an insect representative, which readily deceives the fish on the feed. In most respectable fishing-tackle shops fishing flies may be bought; but perfect imitations of the natural flies, in all their seasonal mutations, are not always so certainly to be procured as Mr. Salter seems to insinuate. Our directions are, to find among the vendors of fishing-tackle such as are known themselves to be able practitioners of fly-fishing. If such are found really to make their own flies, or at least to have them dressed under their own eye, and from patterns true to nature, buy there without fear. When our hey-day of the fishing mania was on us, as already observed, no flies but those made by ourselves pleased,

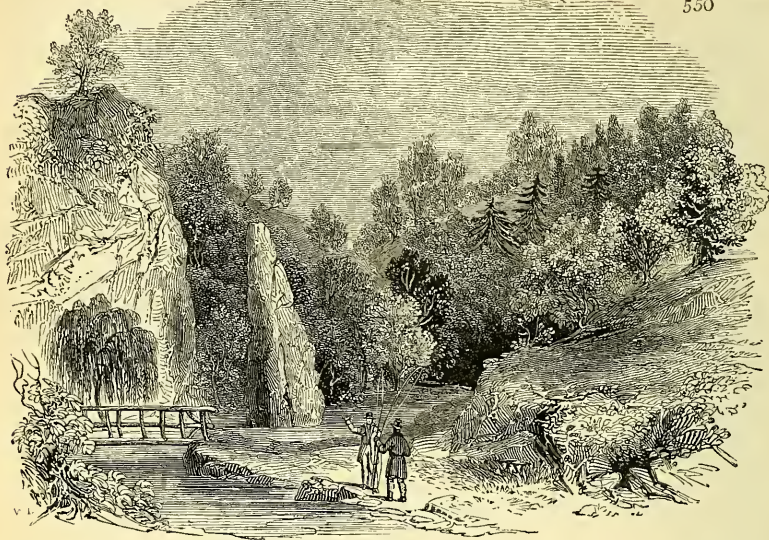
but when we extended our tours to distant counties, we found ourselves obliged to consult the native artist, both in the matter of which the killing flies were composed, and the manner of their dressing. We, therefore, found that the provincial artists were valuable aids; and further experience has proved that flies, and killing ones too, can be procured from such sources. We, however, confess we were not always so tolerant towards the flies of the shops; but the periods we allude to were some five and twenty and even thirty years ago, when fly-dressing in the trade was by no means so well understood as it is now. In our later sojournings we found, wherever we went, that some professional makers and some venders of flies were localised there; which flies owned some specialities that really were necessary to be presented to the local fish to insure their capture. The London dressers of flies (some of them particularly) are very accurate dressers to pattern; some, however, are less particular; it therefore behoves the purchaser to know what he wants, and to buy only that. The diagrams which head each month in our descriptions were purposely dressed to an entomological description of each insect, and we think they will be found faithful representations of the insect intended. It would have pleased us to have been able to present them in their varying colours also; but the vast number which would have been required for a work like this, of extensive circulation, would have made it utterly impracticable. We cannot also but feel it equally a duty and a pleasure to state, that the originals from whence our types were made, were gratuitously furnished by Mr. G. Bowness, jun., of 33. Bell-yard, a very able artist in the manufacture of fishing-tackle generally. These flies being standards, Mr. Bowness engages to keep by him so numerically arranged, that a letter by post, stating the number of any one or more of the flies specified in the text, will be returned by post, which arrangement we conceive will be very convenient to the angler when on his travels. We can also recommend the salmon flies, in their varieties, as of the most effective kind, and which also are numbered for the accommodation of the angler. We have divided them according to their local excellences, it being found by our most experienced salmon fishers, that while very large and gaudy flies attract in the Irish waters, and in a degree in the lochs and rivers of Scotland and England, more sombre tinted flies prevail in the Welsh waters. Of course, exceptions in both cases will be found to arise. We have likewise reason to know that both shops which bear the name of Bowness, in Bell-yard, can furnish good fishing-tackle: they are both reputed makers, and both deserve the encouragement of the public; and we owe them our acknowledgments, on our artist's account, who was gratuitously supplied with some ingenious articles; but it is to Mr. G. Bowness we are indebted for our flies, for our engagements would not allow of our own dressing. We hear much and we read much of the Dublin tackle, and sometimes of the Scotch tackle also — each excels in some particular articles. However, at present the best rods and flies are made in London, though the best hooks are made by Phillips of Dublin.

3691. *We are not, however, prepared altogether to deny*, as regards the flies to be purchased of general venders of fishing-tackle, that too many are supplied from wholesale fly-makers but little acquainted with the natural flies. It is not uncharitable to suppose, that the majority of these may be indifferent to any thing but dispatch in the execution, and neatness in the finish. With all our approval of the flies now dressed, it may therefore yet happen that they will not present that typical accuracy to deceive trout or grayling to take them, although both of these fish may (as is often the case when an ill-dressed fly is shown) rise to it and immediately turn short away. We will grant even that the flies of such makers are seen to take fish; it is, however, only when they are in the humour to take any thing, as sometimes is the case; but when any of such fish are really on *the feed*, particularly on any one tribe of insects (which is the time when the professed angler is on the look-out for his best sport), it is then not at all unlikely that his collection will not present the immediate likeness of the fly on the water; and without it, perhaps not a single fish can be stirred. This is no fancied case, but one of frequent occurrence; and until we dressed our own flies, it happened to us almost every day we went out. No remedy, therefore, for such a dilemma exists, but that the fisher be prepared to *set himself down and dress an exact imitation of the passing fly*. Whether then you dress your own flies or not, be at least able to do it, and the sport which follows will then be infinitely more delectable for the occurrence. If the angler be a traveller to any considerable distance, he will find it still more necessary on many occasions to imitate the local flies of the district he passes through, for these continually change as he proceeds, not only in kind, but the individual insects of one locality, operated on by the agencies around, present a very different aspect from those of another: thus, in northern waters, where the development of the insect frame is not so complete, the full-bodied flies of the south would in most cases be refused.

3692. *In our early piscatory wanderings* we carried with us a full London-dressed set of flies into Derbyshire, and for two or three days we flogged the waters of the Dove with them with great perseverance, but with very indifferent success, until we met with an angling barber, who gave us a very small Mackarel fly, dressed with a grouse hackle and blue-dubbing. As long as the Dove flowed between the rocks in the exquisite scenery of Dove-dale,

represented by a drawing made by us on the spot (*fig. 550.*), this fly was most killing; but so local are insects as baits, that when the stream entered the more open country, not two

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DOVE-DAT.E.

miles distant, our barber friend showed us practically, that the favourite mackarel fly must be changed for a new wing and another body. Again we were successful, and yet neither of these flies or any thing like them had we ever seen in a London dresser's case, replete as such repositories usually are with fancy flies. Whoever has travelled extensively on fishing expeditions, must know as well as ourselves, that there are local flies, and killing ones too, beyond the contents of the best London collection: and he must also know, that without good imitations of these, the best sport is not to be expected at particular times, and more especially when the water is low and fine, and when such flies are in their full season. This likewise may happen when no friendly barber is at hand, or if perchance one or two may be begged from some passing angler, yet a stock cannot be procured, probably, at any price. Which therefore is the most to be envied, he who has merely the money to buy that which cannot be purchased, or he who has the material and the art to make what even poverty could not deprive him of? We presume therefore that we need not to farther press the advantage to each fly-fisher of being able to make his own flies: if he travel much, it is more indispensably requisite, for should he carry with him a host of winged baits, the most killing are, in all probability, not amongst them. They are all Johnny Newcomes, and the wary trout seeing no old acquaintance, turns tail and makes for his hide. It matters not that the flies he took, to look at by a human spectator, were bewitching, and their effects were warranted to prove more wonderful than the lamp of Aladdin! But he did not reflect that what may kill on some rivers, here only alarms: and we have positively known a person try twenty different sorts of fly, without being once able to raise a single fish, or at least to hook one (for it is well known that they will in frolic rise to every thing); in such case, his patience becoming quite exhausted, with a hearty exclamation he sends fish, line, rod, tackle-maker and all, at once to the d—l. We therefore propose to offer such a list as shall include the entire fishing entomology of England, Wales, Scotland, and Ireland, presenting, as we hope, a faithful description of every popular fly, and the best method of *dressing*, as it is termed, the mimic representation of it; adding also the many names, scientific and popular, which authors have designated it by. We are likewise happy in being able to fill up this want of figured and coloured exemplifications, by recommending to the angler's notice *Bainbridge's Fly-fisher's Guide*, and the *Fly-fisher's Entomology* of Alfred Ronalds, as both combined depict the insects and their types in the natural colours. We proceed therefore to this task, observing however that locality, caprice, and direct ignorance, have together so bewildered us with local names, and with others that have been superadded by fancy, or by mistaking one fly for another, that our task is in no small degree increased; and if others more critical than ourselves should detect some errors in our catalogue, we hope that candour will impress

them with a conviction that our task has been one of no ordinary difficulty ; and we therefore claim to have a lenient eye cast over our entomological catalogue. Considering the necessity that all fly-fishers, but more particularly such anglers as do not confine themselves to any one district but rove at large, should be capable of imitating the favourite flies of the localities they visit, we forthwith shall proceed to initiate such in the art. At the same time we would fain impress on them, that it will greatly facilitate their acquirement of this art, if they can procure two or three *practical* lessons either from a professional or an expert amateur artist.

SECT. II. *The Materials necessary for Artificial Fly-making.*

3693. *The substances employed in fly-dressing*, as the making is called, are many and diversified. Every part of Nature is ransacked for the purpose, and a complete list of all that may be wanted would occupy no small space. The most prominent of these matters are derived from the coverings of animals, as fur, hair, wool, and feathers. Camlets, mohairs, worsteds, &c. &c. as products of the same cast, are equally sought after. The internal parts of animals likewise yield us most important requisites in the form of silks, silk-worm gut, and wax ; while vegetables offer us grass for lines, thread for whippings, and many other minor matters. The articles used in making artificial flies being very numerous, ought to be kept distinct and well arranged in a set of boxes or drawers, which drawers or boxes should be made with a scrupulous regard to their shutting so close as to exclude moths and other visible insects. Those insects which are invisible, yet still more destructive, will require other means for their exclusion. To this intent we kept our very choice and perishable articles in turned-screw boxes, having one very well fitted with screw-turns ; and this we found the best preservative. The general stock of articles may be kept with much convenience and neatness in a small bureau. Into each drawer, box, or compartment, put some one of the *preservative powders* used by persons accustomed to preserve their furs and cloths, particularly where wool, fur, or feathers. enter their composition, and renew the camphor or pepper occasionally, keeping the more important matters folded in vellum ; and over that place a linen covering, which will preserve them free from moths, &c. No covering however, not even the closest fitting of boxes or drawers, will prevent the attack of the dermestes, which are so minute as to escape the naked eye ; these therefore can only be resisted by the use of a-powder made as follows :—Take oxymuriate of mercury (corrosive sublimate) one part, camphor six parts, pepper and tobacco ten parts each : powder these finely, and when a mixture has been made of the articles, preserve it in a well corked bottle, sprinkling the various matters therewith every few weeks. From the stock collection the fly-angling pocket-book should be stored with a minute assortment of all the various articles, which should also be sufficiently embued with the preservative powder above noted. Turpentine is an excellent preservative.

3694. *For fly-making the requisite materials* may, in many cases, be obtained from a fishing-tackle shop, and where despatch is necessary, or opportunity does not occur to procure them otherwise, it may be done with some saving of trouble ; but when the following items are specified, every one of which is requisite, it will be evident that there is little chance of meeting with all these articles genuine at any shop. Substitutes would undoubtedly be provided by the vender, which the ignorance of the beginner would prevent him from detecting ; or he would discover the error too late to remedy it. We therefore recommend him, if he be in earnest to become an artist in fly-making, to procure the articles for himself from the most original and undoubted sources, which will prevent future disappointment. How many fishing-tackle shops, particularly of the lower class, might an angler call on before he could get the wren's tail feather ? Or, in the long list of other feathers which we shall enumerate, how many would the purchaser find altogether wanting ; or, what would be much worse, have such substitutes palmed on him as would frustrate his best endeavours ? Is it, for instance, very probable that he would meet with the pure dun feather of the blue game-fowl ? It is not impossible, but very improbable. The supposed genuine dubbings are but too apt to be made up by substitutes : there are, indeed, but few dressers for sale, who are in possession of half the variety of furs which the critical artist would require ; and we appeal to the experienced fly-dresser whether our statement be not correct. It follows therefore that the beginner, in selecting his articles, should be most particular to apply for them at the most probable sources, *i.e.* shops of established character.

3695. *To procure furs*, recourse may be, with propriety, had to a furrier, of whom may be obtained strips from skins of almost every variety. Those most wanted will be bear's, grey, black, and dun, of every shade ; badger's, sable, and martin's fur, particularly the parts about the head of the former, and the yellow spotted portions under the jaws of the latter ; squirrel's fur, American and English ; those also of the water and the house rats, field mouse, mole and seal, both dyed and natural. Secure likewise whole skins of the sandy and grey rabbit in all its varieties ; and also of the ferret and polecat. The hare's skin, too, must be procured, the head and ears particularly, for they yield some valuable colours.

Occasional skins, of all kinds, should be looked over when they fall in the angler's way, and any striking portions preserved. The white mole is valuable.

3696. *Of hair*, that of calves, of colts, and of cows, of every colour and of every part, should be collected. Dog's hair, particularly that of spaniels, and others with long silky coats, must be preserved. About the ears of the silky coated spaniel, some of a very fine texture and rich colour, may be always met with. The tan of the black spaniel, and the tawny, all of them are good and worth selecting. In long wiry haired animals of every kind, there is at the roots of the longer hair a fine woolly substance to fill up the interstices, and to give warmth. This should be looked for in all skins, as it presents shades very different from the general exterior hue, and often produces the richest and finest dubbing that it is possible to meet with. Cuttings from the skin of the fox, both young and old, should by all means be procured; indeed, there is no part of the body of this animal from which valuable shades of fur may not be taken. Some hairs also of the stiff kind, from the skins of goats, bears, monkeys, and other animals, should be saved by themselves, as those also from the beard of cats, dogs, and badgers, and from the tail of ferrets or polecats, which must be preserved to form the whisks or appendages to the tail of the May-flies and duns, and the antennæ or horns of the stone, willow, alder, and other flies of the *Phryganea*, as well as of other insect families. Hogs' down, of all colours, will be found useful, and may be readily procured by parting the bristles; the bristles themselves also will be wanted on many occasions. This down, it must be recollected, will prove very valuable for dubbing, as it bears the water, and retains its lustre when wet; it is further valuable, as it may likewise be dyed to any colour. Camlets and mohairs, of every hue, are necessary appendages to the fly-fisher's well stocked bureau. By no means forget a claret colour for the making of the claret bodied dun and some others, and a bright yellow for the little May-fly; black and white furs, also, are useful in completing the assemblage.

3697. *Of worsteds of every variety of shade*, we should strongly recommend a full assortment to be at hand; for large flies they are particularly excellent. We have heard of an angler who fished in the Highlands of Scotland successfully with flies made from worsted alone; and though we pretend not to vouch for the fact, we can vouch for being informed of it by a person of much apparent credibility. Our own experience also proves, that worsteds are of great use in the manufacture of some flies: the cowdung-fly, which is a most important one, cannot be properly made without it; nor, in fact, can the body of any rough fly or caterpillar be so well represented by any other article. Pick up therefore from remnants of Turkey carpets whatever is striking and not common. In the dyeing of worsteds, if some varnish could be introduced which would render them not likely to retain moisture, it would add much to their lightness and buoyancy, for the want of which they are apt to sink in the stream. Mohair by many is preferred to worsted.

3698. *Feathers are the sheet anchor of fly-making*, and cannot be procured in too great variety. From the gigantic ostrich to the diminutive wren, there is hardly one but will occasionally come into use. The ostrich harl (or individual fibre of the feather) is used of its natural colour, and also, when dyed, of various tints. The peacock harl is likewise valuable for its glossy hue, and it would be next to impossible to dress some palmers without it. Among the larger birds, the fibres of whose feathers form the wings of artificial flies, may be reckoned the turkey, pheasant, wild duck, widgeon, and teal; the sea-gull and plover, grouse, woodpigeon, woodcock, coot, plover, water-hen, and partridge, all which are valuable tributaries to the angler's book. Among the smaller, the lark, the starling, the hedge sparrow, the swallow, and many others.

3699. *Brown colours* are obtained from the tail and breast of the mallard, landrail, from the cock pheasant, as well as from the wings of the hen pheasant, which furnishes some of the richest tints. Blues are yielded by the jay, woodpigeon, heron, the highly valued starling, and the snipe, whose blue feathers are a good substitute, indeed almost the only one, for those of the starling. In making the smaller flies where blue is required, we have ravaged the tail of the male tom-tit to great advantage, as well as that of the wagtail, but the feathers of some foreign birds, which may be procured at the bird-stuffer's, are to be preferred even to these. The unsunned starling is the best.

3700. *Reds may be found in the common hen*, the cock pheasant, the goose, the turkey, the mallard, the landrail, and the thrush; but the finest shade is obtained from partridge's tail, and the next to that from the sheldrake. We always dressed the wings of the inestimable sand-fly from one or other of these materials, and we know of no substitute but the male landrail, and he is but an indifferent one. We may, however, here again take occasion to remark that at the bird-stuffer's the angler's wants may be supplied, and that from them foreign feathers of various hues may often be procured, with tintings which no native bird will supply.

3701. *The dun hue* may be found on the wings of the starling, the snipe, the blackbird, both cock and hen, but particularly the latter; and the landrail also can supply it: in fact, all those now specified are peculiarly worthy the angler's preservation. But where shall we direct him to get the invaluable dun-coloured feather? Will he, for the sake of purchasing a cock or hen fowl of this kind, travel to Wales, where they are more plentiful than with us? or will he visit Derbyshire, that he may pick up the breed and cultivate it? Wherever it can be met with (for it is scarce), it should be purchased at any price; for without it there is, or rather was, scarcely a possibility of dressing the principal varieties of the duns to perfection. Now however, where the natural feather cannot be procured by any means, we are happy to be able to add from Mr. Packer, author of *The Dyers' Guide*, a mode of imitating it to a considerable degree of perfection.

3702. *Hackles are the taper feathers* which deck the neck and rump of the cock ; and thus, as this variety of feather is the principal matter in the formation of the palmer, so hackles and palmers have been used, in angling language, as synonymous. Such hackles only should be chosen as have fibres about half an inch long, and those from the game fowl are to be preferred. The principal colours for the angler's choice are white, black, grizzled, grey, ginger, light red, dark red, and that variety in which the dark red is divided by a black listing. The dun or blue hackle, as already observed, is difficult to obtain, not only on account of the colour, but because, as it is wanted to dress minute flies (the duns), those of the dun cock are rather too long and gross, and those of the hen too weak, unless of some age. The dun hackle is seldom unmixed, being rather grizzled, or when not so it is apt to incline to brown. It should be observed, that the feathers of fowls must be collected (if possible) in winter, and always from mature birds : those of chickens or of bantams, of whatever age, are inadmissible. The male bird of every variety is to be preferred, as yielding a more brilliant colour. An exception however exists in the hen of the blackbird, and a few others. The lesser requisites for fly-dressing are silks of every variety of shade, and of every size, from twist to the finest marking silk. Flaw or floss silks should be procured also, as they occasionally assist in dubbing. Gold and silver wire flattened, or in fine twist, will be wanted for ribbing. Wax likewise, of every colour, must not be forgotten, and may be readily procured either in cakes or tapers at the wax-chandler's ; but, except for very ordinary purposes, it should be of a more adhesive quality than mere taper wax, a requisite which has already been noticed, and provided for. Shoemaker's wax, from its property of consolidating and rendering bodies adherent, is well known to be one of the grand requisites in the making of fishing-tackle generally ; but its colour is objectionable in some cases of fly-dressing ; to obviate which, and yet to retain its advantages, the ingenuity of the artist must be exercised. But as no substance can justly supersede the shoemaker's wax, so the fly-angler must never be without a portion of it enveloped in a piece of stiff bladder or leather. Of hooks we have already treated, and of gut also ; we may however add, that for the use of the latter a piece of caoutchouc, or India Rubber, must not be forgotten : the stiffest gut may be rendered straight, the roughest made smooth, by rubbing it with this material.

3703. *The instruments absolutely necessary for fly-making* are few ; for the artist must learn to make his flies at the water side, by the help of his fingers alone, or he will not have attained the requisite proficiency. There are, however, some things which he may find to assist him when he makes his flies on a large scale ; the principal of these is a small table-vice. A hook will allow of the twisting of hairs, and some holes in the surface will admit of spare hooks being placed in for use. When the vice is attached to a table, after the manner of the cushion-screw of the ladies, the little secondary vice may be screwed into either of the holes of the table-screw, and will then be found very useful to take a firm hold of a hook while the operation of winding is going on ; or it may be conveniently used without the table-screw. For the making of very small flies, a pair of fine pliers which close together with a spring are constantly useful, in carrying the turns of the hackle close to each other. In the absence of these it is common to tie the end of the hackle by means of a waxed silk, which will answer the end as well, and in some cases it will do it better, as we shall show. A pocket knife is also required, with two pair of scissors, of the very best manufacture, one with long and fine blades, ending in the sharpest and finest points, the other with short stout blades and large finger loops, but quite as correctly pointed : a minute file may be added to the knife. A large needle fitted into a small handle is likewise useful to pick out the dubbing, and to free the fibres of the hackle when necessary.

3704. *The dyeing of fly-fishing materials* is a branch of knowledge highly useful in our art, as it occurs sometimes to the angler to be forced to alter the colours of his dressings : thus it is occasionally requisite to dye feathers to a particular pattern, as the mottled feather of the mallard, to imitate which is essential in dressing that variety of May-fly, which, by a curious misnomer, is called the *green drake*, although it is dyed yellow. To dye these feathers a permanent yellow of a peculiar shade, slightly approximating to a light green, has always been a desideratum with anglers, and various recipes have been given for that purpose, from which the following may be selected : — 1. "Take the root of a barberry tree, and shave it, and put it to woody vis, the size of a walnut, and boil your feathers in it with rain water, and they will be of a very fine yellow." (*Walton*, edit. 1808.) 2. "Scrape a small quantity of the bark of the mulberry tree, or bruise in a mortar the root ; add to it a lump of alum, and one or two dozen grey feathers of a mallard ; boil them in a pint of rain water, in an earthen pitcher, about an hour, and you will find them the colour you wish." 3. "Put a handful of horse-radish leaves into a pint of water ; to which add a piece of alum the size of a small walnut ; simmer the whole for some time, and it will then dye feathers, silk, &c. a yellow of any depth and fast colour." (*Salter*, p. 261.) 4. "The best dye for all yellow materials used for artificial flies is the bark from the branches of a crab tree, taken in the spring when the sap is up. Before you use it, put any quantity that you want into a vessel, just cover it with a mixture of one-half hard

water and the other half urine, and let it stand twenty-four hours; then put it into a proper vessel, with some alum, according to judgment, so that it simmer over a slow fire about two hours; stir up all well together, and take out the bark; then put in your feathers and other materials, and stir them round till the liquor just begins to boil; then take them out, and instantly throw them into some hard cold water, with a little alum dissolved in it; wash them out and dry them for use. You may make the shades of this colour vary by dissolving more or less of the bark, according to judgment, or letting the materials be in the dye a longer or shorter time." (*Taylor's Angling.*) Or, 5. "Gamboge, dissolved in spirits of wine, will impart a fine yellow to the feathers, if they be first boiled in strong alum water." Mr. Packer, the author of the *Dyer's Guide*, has, through the medium of a sporting work, furnished the angler with several recipes for the purpose. His yellow dye for feathers is as follows:—"Into a saucepan three parts filled with *soft* water, put the feathers to be dyed, and when they are thoroughly wetted add a small quantity of sulphate of iron. Simmer them over a moderate fire a few minutes, and the feathers will have gained the colour base, or mordant. Remove the liquor from the feathers, and put to them instead a smaller quantity of *soft* water as at first, and when it is of a simmering heat, add a small quantity of powdered Aleppo galls."

3705. *The requisite shades of dun colour may be obtained by varying the quantities of the iron and galls.* If it be wished that the feathers should be of a full dark dun, both the sulphate and galls must be in sufficient quantities: increasing or diminishing either of these articles, without altering the quantity of the other, will produce variations in the shades for the angler's choice. If logwood be used altogether, in lieu of galls, a different tint will be the result. Madder, camwood, the bark of the alder tree, walnut peels, &c. procure different hues. Galls, logwood, and madder, should however be omitted when the colouring is intended to approach to a red or brown. The light shades in all cases should be first gained, and any other deeper hue added afterwards. Hard waters alter the shades considerably and injuriously. Having given to the feathers their mordant or base, as already directed, add either sulphate of iron, sulphate of alum, acetate of alum, or acetate of copper, according to the intended shade. Wash the feathers from the mordant, and put them into a strong decoction of that plant which the dyers call weld. Simmer them in this a few minutes, strengthening or weakening the weld decoction, as the colour is to be more or less brilliant. A little practice, and the noting of the various results after each trial, will soon make the angler familiar with the methods of varying the colours so as to meet his wishes. These instructions, Mr Packer states, apply to wool also, which may be tinted in the same manner.

SECT. III. *The Operative part of Dressing or Tying Artificial Flies.*

3706. *Those who possess many angling books* will find that *making, dressing, tying, and busking*, are synonymous terms used by writers indiscriminately when treating on the manufacture of artificial flies. *Making*, though a correct term, is not in angling language so expressive as *dressing, tying, or busking*, particularly the latter, but which is, however, somewhat provincial. We must observe, in regard to the subject on which we are entering, that with all our wish for reform, time has fixed such a technicality (we introduce the term as it is often popularly used), both in the articles employed, and the operations pursued, that we should find it difficult to make ourselves understood by many angling sportsmen in any other language than that which appears on the face of our books of directions. Nay, we believe such hold has the present angling phraseology on the professors of the art, that were we to deviate altogether into terms more precise and critical, we should find our instructions disregarded, and ourselves suspected of mere pretension supported by little knowledge of the matter. Previous, therefore, to our detail, we deprecate criticism in our use of many conventional fly-making and fly-fishing terms, which we know are not to be justified by either literary or scientific rule. Some of those which time has fastened on us are, however, so glaringly absurd, so perfectly contradictory, and so unnecessarily multiplied, that they even tend to bewilder the beginner, as they did ourselves, in a labyrinth, which requires much time and trouble to get rid of. Some of these we shall therefore omit in our descriptions; but there are others so inseparably connected with our piscatory writings, that we cannot at present abandon them. The anomalies of a few such as might make our readers stumble at the very threshold, we shall notice at our outset.

3707. *The terms dub-fly and dubbing* are of this kind, both of which have been, and still are, used in our books in an obscure and even contradictory manner. *Dub* appears to have been an old synonyme of fly. In the *Boke of St. Alban's* we read of "*dub or fle, or progeny of palmer,*" and as such every winged fly was a dub-fly, and so it is probable the angling signification intended it; and the artificial dub-fly was considered to be a fly body made on a hook, to which wings were afterwards added, from whence the materials necessary to form a fly body came to be called *dubbing*. Nevertheless, by some forced construction, dub-fly in our books is often used to denote a fly itself with a *large* body, which is to be artificially represented by a *bulbous* mass of wool or mohair, and of those materials only. This notion, however, all well-informed dressers have laid aside; dubbing in our description therefore shall be considered as denoting the materials of which the body of an artificial fly is composed, let them be of what kind they may. Buzz and buzz-fly is one of the old names which had been applied to very different insects, and also to the *larvæ* of insects, and is even at present unsettled in its application. Popularly, as regards insects, the buzz-fly is a fly in a buzzing or *whirring*

attitude: and it appears to have been in angling language intended to signify either beetles or bees, or, with more probability, any insect of a buzzing form and hairy or rough aspect. This made the latitude wide, and it brought in the *larvæ* of some insects which are often massive and rough, and which were in olden times called wool-beds. The artificial buzz-fly, the representations of these *larvæ*, and those of short fleshy *larvæ* called grubs, and those also better known as caterpillars, but equally short and thick, from likeness in figure have been jumbled together and mistaken for each other; and in the course of time have so often borrowed each other's names, that it has become difficult to distinguish the insect or matter intended by the terms as they stand in some of the angling books. *Buzz* has often been applied by anglers to the smaller *Scarabæi* or beetles, particularly to the *Coccinella*, or ladybird tribe; thus we have the Marlow-buzz, &c. &c., intended by most who use it to signify a case-winged insect. The term however, if retained, ought to apply only to a group of such insects as, like the *Bumblebee*, are of a rounded button-like form, but of rough aspect.

3708. *The hackle and the hackle-fly* are equally unsettled in their application, and he must be indeed *intelligent* who can render all the accounts concerning them *intelligible*; for the denomination is found at one time to mean nothing more than the long feather of a domestic cock's neck, and at another is applied to a manufactured article for enticing fish: thus in one page the angler may find directions to prepare a hackle for the making of a fly, and in the next he will find instructions to begin his day's fishing with a hackle or palmer. The ambiguity of this Protean object is therefore now doubled, for *hackle* is not only a feather and a fly, as the angler chooses to have it, but the fly known to one as a hackle is called palmer by another; and so to increase our Babylonish jargon, we are struck with the appellatives of both palmer-worm and palmer-fly.

3709. *Palmer* (for which the hackle is frequently used as a synonyme), though a term constantly occurring in the pages of both old and new treatises on angling, is yet of equal and even more doubtful application than those already quoted. By it is intended, in one instance, an artificial bait of the fly kind; and thus we constantly meet in our books with directions to use at one time a golden palmer, and at another a peacock palmer, &c. &c. In other places, and in older writings particularly, palmer is intended to express the living caterpillar, which was heretofore called a palmer or pilgrim from its roving disposition; and as every thing which crept was in olden times popularly called a *worm*, so we as frequently stumble on the appellation of *palmer-worm*. Thus, as a proof of the inconsistency of our angling vocabulary, *hackle*, which at once means a feather and a fly, is synonymous with palmer, which expresses both an artificial fish bait and a living caterpillar. Henceforth we recommend to the angler to consider *hackle* as applying only to the hackle feather of a fowl; but as to the palmer, we have yet other difficulties to contend with; for as the lizard, when it has by creative genius mounted a pair of wings, becomes the dragon of fabled story, so the prolific powers of the ancient anglers occasionally bedecked their creeping palmer with wings likewise, and we thus as frequently read of a *palmer-fly* as of a *palmer-worm*. The term fly is evidently an absurdity, as applied to what was intended by palmer formerly, and even to what is intended now, except when it is proposed to consider it as the representation of a humble bee, which was a later view of it. It may also be called an anachronism; the wingless being, it is true, is in the way to become winged, but it has a long stage to travel before it becomes so. Nevertheless, conventionally viewed, the artificial insect called by this name is so mixed up with the winged types under one common appellation of flies, that with all our wish for etymological reform, we cannot, we fear, wholly abandon it; but we can in future prevent its misapplication by uniting it with *hackle*, which is another equally misapplied term. All artificial flies, therefore, may be classed under the terms of palmer-fly (or, as we shall hereafter generally call it, the *palmer-hackle*), the *hackle-fly*, and the winged fly; some would confine them to the *hackle* and winged fly only.

3710. *The palmer-hackle* we regard as a more expressive name than either palmer or hackle alone, the palmer being the thing represented, and the hackle the means of representation. This term will likewise serve to distinguish it from the *hackle-fly*. The *palmer-hackle*, in its simplest sense, is the long fibrous feather from a cock's neck, or his rump, called a hackle, when wound round a fishhook. It is, however, more often wound over a body previously applied to the shank; and when the shank of the hook is left long, the body made thin, and the fibres of the hackle are long, numerous, and well displayed, they resemble the *hairy caterpillars*, which fall from plants and trees into the water. When dressed on a shorter hook, with hackle fibres shorter, less displayed and less rough, it will represent young *larvæ* of insects, called woolly-bears or *wool-beds*. If it be made still more round, smooth, and snug, it may be the image of the *buzz-fly*, considered as *Bumblebee*; or, as the wetting smooths the feather, it may be taken for the *Coccinella*, or ladybird tribe, or other small beetle.

3711. *The hackle-fly*, although it may by some dressers be intended to represent some particular flies, yet intrinsically is only the winged fly dressed after a particular fashion, and remarked for the simplicity of its construction. A body being formed, as in the *palmer-hackle*, a hackle, usually one with long fibres, is wound over the body, not over the whole of it, but for rather less than the half of its length, and which hackle, so wound, is intended to represent both wings and legs. The winged fly is one of much more complexity of manufacture, and is formed by means of a portion of feather stripped off from the stem or

quill, and being bound lengthways on the shank of the hook, is then elevated and divided, to represent wings, a body and legs being added by distinct operations.

3712. *The antennæ of flies* are called *feelers* or *horns*, and the appendicular caudal processes or *setæ* of the May-fly, &c. are termed *whisks* or *forks* by anglers. Some authors inform us that the addition of these is wholly unnecessary; but whatever may be said to the contrary, it is always prudent to add whisks to the made flies when they exist in the natural state, particularly the tail whisks of the *Ephemeridæ*, May-flies and duns. The antennæ are difficult to retain in their situation, and for that reason may be omitted; but at the same time, by making them of a short taper and moderately firm hairs, or a fibre of feather, they can be formed to show well in the water; and the stone-fly, and other large *Phryganea*, would be better dressed with them: the horns of the smaller kinds it is as well to omit altogether. Whenever either are added, we would recommend that attention be paid in adapting to nature the colour, size, and length. They may be made of the hairs of dogs, cats, and other animals, particularly the bristles of their beards; and sometimes by a fibre from the same feathers which formed either the wings or legs, according to colour. The primitive long hairs, which surmount the short fur of many of the skins at the furriers, are likewise good for that purpose.

3713. *We shall now proceed to give concise general directions* for the making or dressing, as it is called, of artificial flies; and in pursuance of the olden custom, we shall offer both figures and written descriptions thereof; but in justice to our readers we state, that two or three mornings spent under the tuition of any experienced fly-dresser, particularly one who not only dresses for sale to the public, but also practises the angling art himself, will do infinitely more than all the written directions we can offer, the principal uses of which are that they may recal and further indent into the mind what was seen under the tuition of the practical fly-dresser.

3714. *The preparatory steps towards fly-dressing*, whether it be a common hackle or a dubbed winged fly, are to place the whole materials in due order around you, after the method of Bainbridge and Alfred Ronalds, who both excel in valuable coloured illustrations of this subject, as well as written instructions thereon. If the weather be cold, it will be prudent that a warm room be chosen for the purpose, for as wax, and generally wax of a soft adhesive nature, is an indispensable requisite, so it requires such a temperature as will keep it pliant, to do the work at all satisfactorily; and be it observed, it is this which renders fly-making a work of increased difficulty in the depths of winter. Select a proper length of gut, which having ascertained to be perfect, straighten and render it pliant, either by soaking it a few minutes in warm water, or, if it be not very stiff, pass it a few times between the folds of a piece of caoutchouc, or India Rubber, which will answer the purpose more conveniently and as effectually. Next select a proper sized hook, which examine as to strength and temper by the method already directed. If dubbing be in the dressing to be used, proceed to moisten a little of the proper colours, to enable you to form a judgment of its appearance when in a moistened state, as most animal matters used in fly-dressing, particularly furs and camlets, become several shades darker when wetted. Were this not done, therefore, the fly as it left the maker's hands, however well it then represented the natural insect, would, when it reached the water, no longer be the same; on the contrary, in some cases it would prove the very reverse; this is, therefore, a matter which must be attended to. To ascertain the exact colour of the furs and camlets, it is usually directed that they should be held between the eye and the sunshine: but a good sight will readily detect the hue in any open day; for which reason it is by no means prudent to make flies by candle-light, unless indeed the materials have been previously arranged in the day. When the body of a fly is not formed from either worsted, camlet, or fur, a peacock's harl is often substituted, particularly in the making of the palmer-hackle: in such case, take care to be ready prepared with one of sufficient length to furnish the whole of the wraps. Having all the materials in preparation with well waxed silks, particularly some of the finest *marking kinds*, proceed to select and arrange the feathers necessary for the next stage of the business.

SUBJECT.1. *To dress or tie a Palmer-fly, or Hackle.*

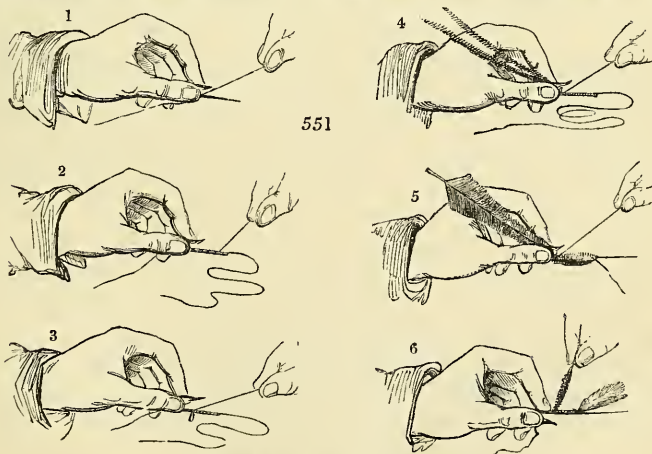
3715. *The dressing of a palmer-fly* after the methods we employed, rendered some little variation necessary, according as the body of it was intended to be formed of harl, or of fur dubbings. As a harl body is the most common, we will commence our instructions under that view; and we would request that the eye be referred to each figure, as enumerated in the cuts which follow hereafter from March. Place the finest end of the gut within side of the hook, as far as the bend. This done, and being prepared with some waxed silk of the prevailing tone of colour of the palmer-hackle about to be made, begin the whipping one turn beyond the extremity of the gut, by making a half hitch, leaving by its means a loose end of silk about four or five inches for future use. The other and longer portion of silk wrap very firmly over both hook and gut, until it has reached to within four turns of the top. Now place on the under surface of the hook the hackle butt, and on the upper surface

the harl, both of them pointing forwards. Continue the silk very firmly two turns over the hackle, and the two remaining turns over the harl, allowing the hackle now to hang free from the silk. Observe also that the hackle, already stripped of its soft downy feathers near the root, be so placed that the upper surface of the feather may present itself when it is wound on towards the head of the fly. Having reached the extremity of the hook, make a half hitch, which will secure the silk from slipping forward; and now folding down the harl, make two turns of the silk back again, which will then leave an excellent head for the palmer-hackle.

3716. *When the body is to be formed of fur dubbing*, proceed in every respect in the same manner, with the exception of leaving a loose end; in this case inclose the silk in the usual manner, and carry the wrapping to the place where the hackle was introduced, which having secured by two turns, either continue winding the silk to the end, and allow the returns of it to form the head, or otherwise let the head be formed by means of the dubbing now added to the silk after a half hitch has secured the wraps. The older directions advise, that previous to this the silk be carried two or three turns round the bare hook; also that the point of the gut be singed to prevent its slipping; both of which in the manufacture of large flies, as those for salmon or very large trout, may be good precautions; but with smaller flies, firmly wrapped, and that not too thick, such precaution is not necessary. For it should be observed as a general and important rule in fly-dressing, that all that is essential for strength and safety should be done; but not even one *unnecessary* turn should be made, as it adds to the weight of an article, whose principal quality depends on its *lightness*. For this reason also be careful to clip superfluous ends of gold wire, &c. as close as possible in the operation.

3717. *In initiatory lessons in fly-dressing*, if they are to be learned from written sources, the matter treated on should be very clearly described. We have already favourably noticed a small work written by James March of Waterloo-road (*Blacker* is also first-rate), who when living was an excellent rod-maker; in proof of which we can now show one made by him, to our order, more than twenty years ago, and is yet, after killing trout and grayling in most of the rivers of the United Kingdom, unwarped and perfect. His little work, called *The Jolly Angler*, we recommend to the notice of all young fishers; and in proof of the concise yet instructive matter it contains, we select the directions on the making, tying, and dressing of artificial flies, partly drawn by him from Bowler, and partly from his own resources. As initiatory lessons to the making of artificial flies, both the figures and descriptions are extremely valuable to the tyro in these manipulations; and it is for his benefit that we introduce them here.

3718. *To dress a palmer* after the method of March and Bowler proceed as follows:—“Having ready a hook (No. 6.), your gut at hand, some red silk waxed with bees-wax, some strippings of black ostrich feather with a few fine red hackles (get all your feathers from cock birds, if possible, as they are stronger in their fibres, and brighter than those from the hen); then take the hook, by the bend, between the forefinger and thumb of your left hand, with the shank towards your right hand, the point and beard of the hook not under your fingers, but nearly parallel with the tops of them; afterwards take the silk



ACTIONS OF THE HANDS IN FLY-DRESSING.

(1, fig. 551.), hold it likewise about the middle of it with your hook, one part lying along the inside of it to your left hand, the other to the right; then take the part

of the silk which lies towards your right hand, between the forefinger and thumb of that hand, and holding that part towards your left tight, along the surface of the hook, whip that to the right three or four times round the shank of the hook towards the right hand; after which take the gut, and lay the end along the inside of the shank of the hook till it reaches the bend, as at 2, *fig. 551.*; then hold the hook, silk, and gut, tight between the forefinger and thumb of your left hand, and afterwards give that part of the silk to your right hand three or four whips more over the hook and gut, till it comes nearly to the end of the shank; make a loop, and fasten it tight; then whip it neatly again over silk, gut, and hook, till it comes near the bend of it, after which make another loop and fasten it again, as at 3, *fig. 551.*; then if the gut reach farther than the bend cut it off, and your hook will be whipped on, and the parts of the silk will hang from the bend of it; then wax the longest end of the silk again, and take three or four strands of an ostrich feather, and holding them and the hook, as in the first position, the feathers to the left hand, and the roots of them in the bend of the hook, as is shown at 4, *fig. 551.*, with the silk you waxed last, whip them three or four times round; make a loop and fasten them tight; then, turning the strands to the right hand, and twisting them and the silk together with the forefinger and thumb of the right hand, wind them round the shank of the hook till you come to the place where you first fastened; then make a loop and fasten them again. If the strands should not be long enough to wind as far as is necessary round the shank, when the silk gets bare you must twist more on it; after which take your scissors and cut the palmer's body to an oval form, taking care not to cut away too much of the dubbing. Both ends of the silk being separated, wax the one next the bend again; then take the hackle, hold the small end between the forefinger and thumb of your left hand, and stroke the fibres of it with your right, contrarywise to which they are formed, keep your hold as in the first position, and place the point of the hackle (5, *fig. 551.*), in its bend, with that side which grows nearest the cock upwards; then whip it tight to the hook. In fastening it, avoid tying in the fibres as much as possible; the hackle however being completely secured, take it by the large end, and keeping the side nearest the cock to the left hand, begin with your right hand to wind it up the shank upon the dubbing, stopping every second turn, and holding what you have wound tight with your left fingers, whilst, with a needle, you pick what fibres may have been taken in: proceed in this manner until you come to the place where you first fastened, and where an end of the silk is; then clip those fibres off the hackle which you hold between your forefinger and thumb close to the stem, and hold the stem close to the hook; afterwards take the silk in your right hand, and whip the stem quite fast to it; then make a loop, and fasten it tight; take a sharp knife, and if that part of the stem next the shank of the hook be as long as the part of the hook which is bare, pare it fine; wax your silk, and bind neatly over the bare part of the hook; then fasten the silk tight, and spread shoemaker's wax lightly on the last binding; then clip off the remaining silk at the shank and bend of the hook, and also any fibres that may stand amiss." This is Bowlker's description, with a slight alteration of March's own. Indeed he has, by his illustrative cuts applicable to each stage of the fly, greatly added to the printed directions. He continues,—"Of course you are aware that the quantity of ostrich feather, as well as the size of the hackle, must depend upon the size of the hook you dress; you should also tie it on so that the brightest side of the feather will be towards the head. If you want a ribbed body, tie your gold twist in with the ostrich fibre; wind the ostrich up the shank first, and then the gold twist after, making them both fast together. By following this description, you may make a great variety of palmers; and take my word for it, from the Land's End to John-o'-Groat's, there are few rivers where a palmer does not bear the palm. I keep them of all colours and sizes, and use them early and late, in preference to any other; the May-fly, in season, *not* always excepted. If ever the winged flies supersede the palmer, is in clear water during the middle of the day. The white moth is a likely one towards dusk; but even here a large white rough palmer answers every purpose."

3719. *The making of a winged fly*, March gives *verbatim* from Bowlker thus:—"First hold your hook fast between the forefinger and thumb of your left hand, with the *back of the shank* upwards, and the point towards your right hand; then take a strong, small silk, of the colour most predominant in the fly you intend to make; wax it well with wax of the same colour, and draw it between your finger and thumb to the end of the shank; then whip it twice or thrice about the bare hook, which prevents its slipping, and the shank cutting the gut; which having done, take your gut, and draw it likewise between your finger and thumb, holding the hook so fast as only to suffer it to pass by, till the end of the gut is near the middle of the shank of the hook, on the inside of it; then whip the silk twice or thrice about gut and hook, as firm as the strength of the silk will permit; after that take the wings, which, before you began to make the fly, you had stripped off the stem, proportional for that purpose, and which lay with your other materials by you (as you always should before you begin), and place that side downwards, which grew uppermost before, upon the back of the hook, leaving so much only, to serve for the length

of the wings, of the point of the plume, laying it, reversed, from the end of the shank upwards; then whip your silk twice or thrice about the end root of the feather, gut, and hook, which being done, clip off the root end of the feather close by the arming, and then whip the silk fast and firm about the hook and gut till you come to the bend of it; and then, if the gut goes beyond the bend of the hook, cut it off, and make all fast: take then the dubbing, which is to make the body of your fly, as much as you think will do, and, holding it lightly with your hook, between the finger and thumb of your left hand, take the silk with your right hand, and twisting it between the finger and thumb of that hand, the dubbing will spin itself about the silk, as seen at 6, *fig. 551.*, which, when it has done, whip it about the armed hook till you come to the setting on of the wing; afterwards take the feather for the wings, divide it into two equal parts, and turn them back towards the bend of the hook, the one on the one side, and the other on the other side of the shank, holding them fast in that posture, between the forefinger and thumb of the left hand, which having done, warp them so down as to stand and slope towards the bend of the hook; and having warped up to the end of the shank, hold the fly fast between the finger and thumb of your left hand, and then take the silk between those of your right and where the warping ends, and pinch and nip it with your thumb-nail against your finger, and strip away the remainder of your dubbing from the silk, which wax again; and then, with the silk newly waxed and bare, whip it once or twice about, crossing backwards and forwards from one wing to the other, till you make the wings stand properly; then fasten and cut it off; after which, with a point of the needle, raise up the dubbing gently from the warp, twitch off the loose hairs, trim the wings both of one size (or your fly will not swim true), and the whole is completed."

3720. *The further progress of a body composed of harl*, we ourselves take the liberty to state, is, that after the head is formed, it should be wound round the shank closely and evenly, either in one or more strands, as the body is to be smaller or larger, until it arrives at the point from which the whipping commenced; here secure it by a half hitch, and then proceed to finish off, as we shall presently direct.

3721. *The ribbing or platting*, of whatever kind, varies these processes but little. It is at first laid in and secured, either with the harl or with the fur dubbing; and after the body is formed, is carried round it in open turns between the strands of the harl, provided that is used; and the twist having reached the finishing process, or end of the body, is to be secured with the rest by the general means of fastening, as follows:—When either the harl or the dubbing has been carried to the proposed length, make a half knot to keep the whole together, until the materials which formed the body be picked out and arranged in order; the hackle fibres should also be again examined, and any remaining confined ones set free. This being carefully done, fasten off by means of the hidden or invisible knot, which will secure the whole completely.

3722. *In the making of palmer-hackles*, which are supposed to be merely imitations of caterpillars, one general length of body is usually preserved; but when palmer-hackles are dressed to imitate living winged flies, it is evident that the body must be dressed to the length of the original.

3723. *This was our early and general method of tying or dressing the palmer*: we have since frequently varied it according to circumstances; and we have dressed our flies after the directions given by every writer of credit, from every one of whom something useful may be learned. The method of one is to be preferred in one part of the process, and that of a second in another particular. One is famous for a certain form of fly; a second dresses his palmer to admiration, but laughs at winged flies; while a third is a sloven in his finish, but most happy in his colours.

3724. *Captain Williamson's instructions for making a palmer-hackle* are simple, concise, and intelligible:—"First, whipping the hook on for a few laps, and lapping in the ends of a long fibre and of a hackle at the same place, then lapping down the whole length as far as the shank is straight; and in making the half hitches at bottom a small piece of platting is lapped in: this done, carry the fibre round the hook very close, adding a second or more fibres, if requisite, to complete down to the end of the whipping: when it is completed thereto, lap it under the platting, which is now to be carried round from the bottom to the top, leaving a very small interval between each round: when the platting is brought up completely, let the hackle be passed round progressively downwards, so as nearly to fill up the intervals left by the platting; fasten off at the bottom with two half hitches: if the hackle have very long stiff fibres, the palmer will resemble hairy caterpillars."

3725. *For making a palmer-hackle* excellent rules are concisely given in Bainbridge, accompanied with a plate well adapted to illustrate his directions. As this author's method, like our own, commences the hackle by winding from the shank, and carries it towards the bend (contrary to the practice more generally pursued), we shall omit the quotation of it as unnecessary. Ronalds prescribes the same method.

SUBJECT. 2. *The Hackle-fly.*

3726. *The simplicity of construction of this method of representing winged flies* will prevent any necessity for dwelling long on the subject. Two kinds are made. First, whip a gut length to a hook exactly in the manner already described for the palmer-hackle, whipping from below until within three or four turns of the butt; here fasten in a long fibred hackle of the desired colour, furnish the silk with a little dubbing, and working it to the top, the return will form a head. Having drawn the dubbing from the silk, make a half hitch for security, and taking hold of the hackle, carry it around the shank and fasten off by the silk; which done, again arm the silk with a proper coloured dubbing according to the size

of the fly, or, if intended to represent a very minute body, let it be done by the silk alone; but whether it be dubbing or only silk, continue it down the length of the parent fly, either to the part opposed to the barb, when it is a short bodied one; or below the barb, for one with a long body; fasten off with the hidden tie.

3727. *The second method of making a hackle-fly* is somewhat more complex:—Arm a hook with its length of gut exactly as the former, but commence the whipping from the centre of the silk instead of the end; thus a loose portion will be left for a fastening off below, observing to inclose in the first turns the stem of a fine hackle, which then leave well fastened. Having carried the whipping upwards, lap in a long fibred stripping of feather, in preference to a plain hackle, which carry round the shank two or three turns, and then fasten off. Trim off the fibres to the requisite length and appearance, making them long or short, above or below, as occasion suits. Having so done, arm with dubbing the loose end of the silk left below, or proceed without it, according to the body to be represented; but this kind of fly usually requires a full body: carry this up to meet the wing feather, and fasten with a half hitch. Lastly, lap the hackle from below with rather wide turns at first, but thicker ones as it proceeds to meet the wing feather, where the silk divested of the dubbing will be ready to secure it. Various modifications are made in this kind of hackle-fly, but these are the principles on which all hackle-flies, properly so called, are formed; and the construction being considered aright, it will not be difficult to distinguish what winged insects they are most likely to represent. The first is not ill suited to be the mimic of the long thin dipterous or two-winged tribes of the *Tipulæ*, or crane-flies, as well as of the *Empidæ* (gnats) with some others that have single wings with long bodies and long legs. The second are formed to represent the coleopterous tribes, the humble-bee, and some of the more bulky flies.

SUBJECT. 3. *Making a winged Fly.*

3728. *The method of making a winged fly*, as given by Bowler, has already appeared; and a very good one it is. Bainbridge's mode, however, differs somewhat, and we have often dressed our own winged flies after it. In the following directions it will be seen that we have endeavoured to combine the excellences of both the methods, although in some few respects we have taken the liberty of differing from each. The minutiae of holding the hands, &c. &c. is so much a matter of fancy in the same operation even, that it must eventually be left to the choice of the learner himself, who will soon find out how he may best compass his ends. The preparatory operations are nearly the same as those already detailed. A feather for the wings, of the proper colour, size, and form, should be at hand; but it should by no means be at this time stripped of its fibres, as is usually directed to be done. That process is better reserved for the moment proper for placing it on the hook, for the artist will find that if he once lays the mass of fibres out of his hand, the chances are ten to one that they will disunite, and all his art will prove ineffectual in again replacing them as they were before. The hackle which is to represent the legs (and which should correspond in size and length with the legs of the fly, of which it is to be a type) may however be prepared by stripping its downy part, and tying its point with silk to assist in holding it, as seen, p. 1137. Have also the dubbing or body colours prepared, by mixing, if necessary, and by wetting to try the colours, as already directed, p. 1134. A proper coloured silk or silks must be likewise well coated with wax of the same hue, or rather of one a shade lighter, the wax itself becoming darker, from attaching dirt and other matters to it, than when it was first put on.

3729. *Begin by firmly whipping* the finest end of the gut (previously knotted by burning in the flame of a candle) to the inside of the hook from the commencement of the bend towards the shank. When this has been carried to within three or four turns of the end of the hook, attach the root end of the hackle by the next turns, not to the upper, but to the under part of the shank. Allow the hackle to hang loose, carrying no more turns around it at present, but continue wrapping the remaining silk as far as the end of the shank, three turns of which will form the head of the fly: should the original fly have a head of a colour different from its body, or should the fly be altogether a large one, then, instead of forming the head with the silk alone, spin around it a minute portion of dubbing of the true colour of the head of the real fly. This done, surround the root of the hackle with a second or third firm turn, and having secured the silk with a half hitch, again wax it, and lay the work down. As regards the hackle, we may remark, that in forming a small winged fly, our own custom was often, instead of using the whole even of a fine hackle, to strip off the fibres of one side of it. Sometimes if this stripping remained entire, or if the intended fly was to be very minute, we preferred this to the remaining portion with the stem, as being more pliant, lying more close, and being somewhat lighter. In other cases we used the remainder of the hackle.

3730. *The next process is to prepare the fibres of the feather* for the formation of the wings, which will require considerable attention and dexterity, as on them must depend much of the imitative perfection of the fly, and of success in its use. Having separated from one side of the feather the exact quantity of fibre necessary to form both wings, detach it from the quill by an even but somewhat sudden pull. Without losing the hold of this portion of feather, lay it on the back of the shank, the outer surface of the feather being applied to the hook, with the root ends pointing towards the bend. It is to be supposed that the practitioner's judgment will direct him to apportion these fibres to the just length of the intended wings; which done, whip the silk that had lately been half hitched two or three very firm turns about the root ends of the wing fibres, the projecting portions of which should be sloped neatly away, as soon as a half hitch has secured the silk. Now

force the plume, which is to form the wings, back with the thumb, and retaining it in that position; if the wings are intended to stand apart, divide the fibres with the finger of the other hand into equal portions, passing the silk through the division forwards and backwards, alternating the crossings so as eventually to maintain each wing distinct from the other. If the wings are not to stand apart, as soon as the fibres are forced back, wrap them at once to the necessary inclination they are to have. The silk being again looped, or half hitched, take hold of the hackle, and pass it once round the hook before the wings; if they are to be divided, pass it through the division between them also, and then wind it two turns for a small fly, and three turns for a large one, close behind the wings, and then fasten the winding securely with the silk. Now examine whether all which has been hitherto done be complete and fast, pick out any confined feather portions, give the wings their final set, and trim off superfluous fibres, particularly upwards and towards the head. Again wax the silk, and spin around it the prepared dubbing, and whip it downwards according to the length of the body of the fly, as already directed; after which draw what dubbing remains from the silk, and fasten off securely with three turns of the invisible knot, which will finish the whole. We however have to remark on this mode of dressing a winged fly, that although it is less simple than some others, we have found it more efficient, having one great advantage, that of requiring but one fastening off. Where there are so many operations, it rarely happens that there are not two, or more frequently three, ends of silk, which are always objectionable from the increased liability to loosen, and the increased clumsiness likely to result.

3731. *The double winged fly.* The process of making those winged flies which have upper and under wings of different shades of colour, gives us an opportunity of doing justice to Taylor's explicit directions for fly-dressing generally, and the four winged fly particularly: — "Begin to whip the gut to the inside of the shank of the hook, but desist when you have gone about half a dozen rounds, and having a proper quantity of feather ready for both upper and under wings, put that for the under wings on the top of that intended for the upper wings, the points a little shorter than the other. This mass lay on the back of the shank, with the right side next the hook, and the butt end downwards, leaving the other end to be, when turned back again, full as long as the hook; then go on with your silk, and whip it round your feather, hook, and gut, six or eight times, or sufficient to make it fast, and with a pair of fine scissors cut away what remains of the butt end of the feather, taking care not to hurt the gut, which must be opened and twisted round the shank of the hook as you go on with the whipping, which is to be continued till it comes nearly opposite the point of the hook, but you must cut off the ends of the gut before they come quite so low down, if found to be too long: next put on your strips of feather for the forks or whisks at the tail, with the fine points downwards, leaving them both exactly the same length, about an inch and a half, and to stand open, and make two laps round with the silk; then take the hackle (which must be ready prepared by stripping off the downy part at top, and cutting the feather across on each side near to the stem, about two or three-tenths of an inch from the point, or by drawing the fibres back to prevent any of them from being bound down by the silk) and whip in the point of it two or three times round, leaving the largest end hanging downwards, and the right side uppermost, and make one lap round between it and the fork, and one below all round the bare hook tight and close to the fork, and cut off the superfluous ends of it if any remain in sight; then wax your silk afresh, and having your stuff for the body well mixed and ready, twist it gently round the silk, leaving it fine next the hook but gradually thickening upwards: make one lap below the fork, and one or two (as required) between that and the hackle, and work it gradually upwards till you come close up to the feather for the wings: if any of the fur remains on the silk, after you have thus formed the body, take it off, and wind your silk slightly a little upwards to be out of the way; then take the hackle by the end of the stem, and rib it neatly, lapping it thicker as you go on till you bring it up to the wings, and there bring it two or three times round as close as possible; and if any of the fibres remain, strip them off from the stem, and unwinding the silk to its proper place, make two or three laps to fasten the hackle, and cut away what remains of the stem; then take the feather for the wings, which has lain back all this time, and turn it downward towards the tail of the fly, and hold it down moderately tight with the rest between your finger and thumb, observing to have all the parts of the hackle out of the way. Whip it twice round the silk just over the feather moderately tight, keeping these turns fast with the hand, while by means of the needle the feathers which are to form the upper wings are slightly parted from the lower; this done, whip two more turns, like the former, very tight, and then two laps close above it; wax the silk again, and take a small bit of the stuff (the same as that used for the body), and twist it round the silk; whip this two or three times round up to the end of the shank (at which time, if there be horns, they may be added); afterwards bring the silk neatly back again, so as to fasten by noosing it about three times between the head and the wings; and here the operation finishes with completing the head of the fly, without so much as one fastening or tying throughout the whole, except at the last; but all is done

by continually whipping and putting in your materials, as above directed, which renders the flies more neat and complete than they can be made by any other method."

3732. *Bainbridge's winged fly* is formed on a rather more simple construction, and may be followed by the beginner until he is *au fait* at the business; but we think he will find that the plan he recommends, though in other respects good, will not display the wings equally well. Mr. B. says, "The most simple mode of proceeding is to fix the wings on the shank of the hook lengthwise, with the narrowest ends nearest the bend, fastening them by three or four turns of the silk above or nearest the head of the hook, and then cutting the root ends close with a small pair of scissors, after which the silk must be brought below the wings, and the body twisted for a short distance, as in the hackle-fly."

3733. *Cotton's method of making a dub-fly*, as given in Walton, is considered by Sir John Hawkins as superior to any other; and many good dressers implicitly follow the directions as they stand. To the tyro they yield a valuable insight into the manipulations; we therefore quote the substance in the judicious form in which it appears in Salter's work:—"Hold the hook between the fore-finger and thumb of the left hand, with the back of the shank upwards and the point towards your fingers' ends; then take a strong silk of the colour of the fly you intend to make, wax it well with wax of the same colour (you should have wax of all colours with you), and draw it betwixt your finger and thumb to the head of the shank and whip it twice or thrice about the bare hook, which is done both to prevent slipping, and also to prevent the shank of the hook from cutting the fibres of your hair or gut, which sometimes it otherwise will do; then take your line and draw it betwixt your finger and thumb, holding the hook so as only to suffer it to pass by, until you have the knot of your hair or gut almost to the middle of the shank of the hook on the inside; then whip your silk twice or thrice about both hook and line as hard as the strength of the silk will permit, which being done, strip the feathers for the wings of a proportionable bigness for the size of the fly, placing that side downwards, which grew uppermost before, upon the back of the hook, leaving so much as only to serve for the length of the wings of the point of the plume, lying reversed from the end of the shank upwards; then whip your silk twice or thrice about the root end of the feather, hook, and hair or gut, which being done, clip off the root end of the feather close by the arming, and then whip the silk firmly round the hook and hair or gut, until you come to the bend of the hook, but no further; which being done, cut away the hair or gut, and fasten it, and take off the dubbing which is to make the body of your fly, as much as you think proper, and holding it lightly with the hook betwixt the finger and thumb of your left hand, take your silk with the right, and twisting it betwixt the finger and thumb of that hand, the dubbing will spin itself about the silk; when it has so done, whip it about the armed hook backward until you come to the setting on the wings; and then take the feather for the wings, and divide it equally in two parts and turn them back towards the bend, the one on the one side and the other on the other of the shank, holding them fast in that posture betwixt the fore-finger and thumb of your left hand; which done, wrap them down so as to stand slopingly towards the bend of the hook, and warp up to the ends of the shanks. Hold the fly fast between the finger and thumb of your right hand, and where the warping ends pinch or nip with the thumb-nail against your finger, and strip away the remainder of the dubbing from the silk, and then with the bare silk whip it once or twice about, to make the wings stand in due order; then fasten and cut it off, after which, with the point of a needle, raise up the dubbing gently from the warp, twitch off the superfluous hairs of your dubbing, leave the wings of an equal length, or else your fly will never swim true."

3734. *Captain Williamson* "on the artificial fly," divides the practice into four classes:—1st, The large fly with wings, either expanded or closed, so as to stand over the back. 2d, The double winged fly expanded. 3d, The single winged hackle, expanded either with or without a body. 4th, The palmer-hackle, which has no wings, but should resemble the hairy caterpillar already noticed (p. 1139.).

3735. "*The large fly with wings* is made by first lapping a few turns on the butt of your hook with well waxed silk, which should correspond in colour with the body of the fly; then taking a bunch of such feathers as you mean for the wings (cut from the stem or centre rib of the feather), lay them pointing forwards and very even at their butts, and fix them with two or three turns of your silk; now take some mohair, or if that be not attainable, some very fine lamb's wool, or rabbit fleece, or any soft substance of the colour you wish the body to be, and laying it very thinly all around your silk, twist them a little together, so that they may lie tolerably smooth. Now proceed to lap the silk so prepared round your hook very light and close, making it thicker or thinner in various parts, according to the shape of the fly you imitate. When you have made it of a due length down the shank of the hook, make two half hitches (or half knots as some call them); then having stripped off one side of the plumage from such a feather as will answer for legs, and leaving a little on both sides at the point to be tied in, wet such tip that it may be compact, and with your silk, now stripped of mohair, &c. beyond what is already done, tie the end of the hackle down close behind where it is feathered on both sides; now making a half hitch, carry the silk close under the butts of the wings with one or two turns round the body, and let it lie out of your way. Next take the hackle and carry it round the body of the fly, at first at some distance, but closer as you approach the wings where the hackle should be thickly set on; tie down the butt of the hackle, cutting away all superfluities with a pair of very sharp fine pointed scissors; then turning back the wing feathers, which should reach the whole length of the shank when thus inverted, whip them down well, either all together, if you intend to have a standing closed wing, or equally divided and spread, so as to form two separate parcels, if you mean to spread wings. Having secured the wings, carry your silk forward, well waxed, and again covered with the

mohair; take two or three turns round the butt of the hook as tight as you can draw the silk with safety, and finish the bend by two half hitches well drawn, and close above the wings. In making the fly, you should observe to take as few laps of your silk as may appear indispensably requisite, for you cannot make a fly too light: you will also have occasion to make more half hitches than I have described above, which your own judgment will guide you in. When you have, at any time, put down a feather, &c. always cut away the superfluous ends before you begin to lap or tie any thing over, because you will else have a heavy, awkward, ill finished fly."

3736. "*As soon as you have completed the form of your fly*, it will be necessary to draw many of the fibres of feathers into their proper directions; thus the legs must be formed by pulling down such fibres as stand on the back of the fly, either out altogether or into places below; their length must also be regulated as well as their quantity, taking care to have more legs under the breast than under the body, the latter should be picked with a needle, &c. so as to make the mohair appear a little between the foldings of the hackle. The wings should be carefully equalised, both in length and thickness, and in direction from the body. Do not be afraid of making your wings stand rather wide; for when you draw the fly through the water they will collapse considerably, especially after being a little time in use. When you have occasion to use the hackles of common poultry, ever select such as grow on the necks (near the heads), and on the rump of gamecocks: those from barn-door fowls, especially hens' feathers, though seemingly good, do not answer; they are too pliant, and neither show nor swim well. Always get the feathers you want, such as woodcocks' partridges', starlings', &c. from the cock birds, for the above reason. In putting on hackles, &c. be careful to keep the glossy or outer side of the feather in such position, that when the fly is made it will be exteriorly brilliant; for this reason, when you whip on a hackle, advert to which side of the plumage was stripped off, and carry it round, either with or against the sun accordingly, so that the upper side of the feather, which is always the highest coloured, may be next to the head. When you have occasion to use a very large hackle, you will find it best not to take that part which remains on the stem, but that which is stripped off, as it will be more pliant and less bulky. Sometimes two hackles will be required to furnish one fly. If you think it proper to add feelers, which project from the heads of many flies, or to have single or double forked tails, they are easily added by whipping in dogs' bristles, or those from over the eyes or under the chins of horses; or, which is in general more appropriate, you can use single fibres from that feather of which the wings of your fly are made."

3737. "*The double winged fly* is generally made with either a very slender or a very full body, the former resembling that of a gnat, the latter that of a moth. It is also made on hooks of every size, from No. 4. to No. 10. both inclusive. I shall enumerate the varieties, with the most appropriate hooks, first describing the formation of the fly. Set on your gut in the manner before described, with the best silk well waxed; then take a feather properly stripped and wetted, as explained regarding the hackle for the fly No. 1., and placing it on its back, that is, the bright side next the hook, and the stem pointing forward along your gut line, whip it down firmly, and make a half hitch; then wind your feathers round the hook for about four times, keeping them as close as possible to each other, and fastening down with a half hitch, cut off the surplus stem. Now take another feather trimmed in the same way, and put it on in the very same manner, as close as possible to the first feather; cut off the superfluities as before, and make fast with a half hitch or two: if you mean to have a body of any substance, wax your silk again, and put on some of the proper coloured mohair; take a few turns down the shank, or, if the body is to be thick, as in a moth, you may lap back again, so as to double the thickness; in some the bodies are rather thicker towards the tails, in others towards the head; to this you will pay due attention; fasten off after you have doubled the body as far back as the last feather will allow."

3738. *It will be seen Captain Williamson's plan of dressing winged flies* differs considerably from all those which have already appeared; it has great simplicity to recommend it, and is not very different in construction from that of a palmer. An artificial fly so dressed, on its first appearance, bears but little resemblance to the living flies which have double wings, and still less to the *Coleoptera*, or beetle tribe; but when the water has given the wing fibres expansion the resemblance is much greater, and we have seen flies so made kill well. But on the whole we prefer the method of winging the fly with a bunch of fibres, to that of encircling the whole body with the wing feather. Many flies have diaphanous wings; none have transparent legs: most of the legs resemble the body in colour; consequently it is seldom that the same feather is proper for both legs and wings. The under wings may vary in colour from the upper, and if their colour be the same with the legs, then both the wings and legs may be equally represented by the second feather; but if this be not done, how can the fly be dressed true after this manner? If this method be persisted in (as we constantly maintain colour to be a most important consideration in fly-dressing), in such case, when the wings are similar, or when one set or both differ from the legs, let there be a small hackle added to the fly to remedy the discrepancy, and to restore the true shade of that part, which as it is the first that presents itself to the fish, so it is the more necessary to be of the true shade. This mode of dressing we think, with some modifications, may be advantageously used for the hackle, and other flies of the beetle tribe, provided the upper or the case wings are stubbed, and are very decided in their colour, and that the lower be of a thin and more transparent kind: the whole must however be dressed full and dubbed. In this way Captain Williamson dresses his moths, and as they are occasionally made to resemble palmers, and succeed, they will surely do so even better by this method. On a consideration however of all the circumstances, we are decidedly of opinion that the other mode is to be preferred.

3739. *The single winged hackle of Captain Williamson* "is dressed by lapping one feather as before described, then whipping on with or without mohair, or other body, till you come opposite to the point of the hook, or to the barb for some long bodied flies, then lapping in a hackle from the bottom of your body, and bringing it up to where the feather

was ended, taking care to make the turns of the hackle sit closer as you approach the wing feather, at which you finish, and fasten off with two half hitches." We are more favourable to this mode of dressing the single winged fly (most erroneously in our opinion called a single winged hackle) than to the former. We have dressed many flies in this manner with great advantage, where the body, wings, and legs, either exhibit very striking differences of colour, or were altogether the same. It will perhaps be considered that we are now "spinning too fine," but we apprehend not, and experience has borne us out in this opinion. We conceive that when the distinction of colour between the several parts is very considerable, it will shine through the occasional openings of the wet dragging feather; but when the differences are not great, they will not become apparent, and the fish beholding no likeness will refuse it. When he is looking for a fly whose colours, like the cow-dung-fly, are all of one hue, a fly so dressed answers well, and it is in this way we account for what we have observed to occur.

SUBJECT. 4. *General Remarks connected with the Dressing of Flies.*

3740. *On the dressing of artificial flies*, a few additional remarks relative to the necessary variations in the form, and some cautions concerning the processes in the manufacture, may not be altogether irrelevant. First, with regard to the wings, concerning which it is too common to be indifferent. The placing of them has arisen from considering most flies as blown on the water, and struggling down its stream incapable of any resistance. This is the case with some, but most of the aquatic flies alight on the water, swim with unruffled wings tranquilly down it, or drop on it, and rise again in graceful motion to deposit their eggs. Is it not necessary at least that such flies should be faithfully represented? In the directions for the dressing of flies, too little stress is apt to be laid on the necessity of accuracy in the form, size, and position of the wings; thus the term of winged fly alike applied to the wide expanse of wing of the libellula or dragon-fly, the close folded wings of the phryganea or stone-fly, the semi-globular form of the coccinella or lady-cow, and the vertical sails of the ephemera or duns, is most certainly not precise. Whoever wishes to become an adept in fly-dressing ought to be aware that it is most necessary that he should attend to the colour, length, and direction, of the wings of the flies he makes. It is for this reason that we cannot prefer the palmer-hackle as a general representative of all flies as some dress them. A fancy of this kind may be entertained, and fish may be caught, because trout are fond of caterpillars of all sorts; but drop a palmer, however well dressed, to represent a dun in colour, when the duns are sailing down, and the palmer will be refused. In the same cases, a winged dun well dressed will often kill in the midst of the natural flies on the water. The effect which the water has on the direction of the wings, should be considered in their formation: thus, where they are intended to spread and stand wide, it is prudent that in the imitation they should stand rather wider than in the natural fly, as the drawing it through the water (for throw as light as you will, the fly will drag in part of its progress) will force the wings together. But at the same time that this is considered, we must carefully avoid making these wide spreading wings of too stiff a fibre, otherwise the water will be ruffled by their action. Fibres firm at their butt, but extremely thin at their points, are best for this purpose.

3741. *In every case buoyancy is an essential requisite in fly-dressing.* Even the flies which are blown on the water seldom sink; those whose habits carry them there float in security on the surface, by an admirable provision of air bubbles to their feet. A fly under the water is therefore an unnatural occurrence, and accidental only; whereas ten thousand pass down the surface of the stream in a summer's day. It is therefore of consequence that the dressed fly be specifically light, and also that the materials of which it is made do not imbibe water to add to its weight. The shape and size of the body are likewise of much importance. Were the wide spreading wing of the small but long bodied libellula dressed with the short thick body of the moth, how long might it be offered to the wary trout without effect. When the small bodied dun is on the water, we have in vain tried every other variety of body without success. Correctness of wing here has not helped us; it must be the minute body alone that will avail. This is exemplified in the *Tipule* or spider-flies, which must be dressed long and thin in the body, with a few long fibres for their long legs; the wings also are long and stand wide apart, and therefore the upper staring mass of fibres of the same hackle might, by good management, be directed so as to represent them likewise with sufficient effect. Here therefore is a case where the hackle-fly, as before observed, may with great propriety be used to imitate a particular fly to advantage; but it is evident that this must be the work of an adept.

3742. *We have seen the ant-flies dressed without protuberant bodies*, but the practice is not to be recommended, as this enlargement is ovarial, and fish of every kind seek it with extraordinary avidity: it is therefore evident that the representation of it must be effective.

3743. *On the colour of flies we must again repeat*, that too much attention cannot be paid to it, particularly in the dressing of the body, because, as aquatic flies rest on the water, or hover over it, the body comes immediately into full view, and commands the first attention; after it the legs are most noticed. Many we are aware argue, that these minutiae are unnecessary, and that a fly is fish bait, and fish will take it. Otherwise, they ask, why are they taken at all with such representations as are complained of, or with fancy dressings which represent no flies whatever. We admit all this in its full force, but we also humbly certify our conviction, that it bears nothing whatever on our argument, because we consider fly-fishing as divested of all its art and science, unless it be capable of tempting trout and grayling under almost every circumstance, perhaps under all except when they are choked with foul water, or sickened by electric clouds. It must be remembered that trout, grayling, and other fly-taking fish, look directly upward, and have to direct their vision through a medium often ruffled by breezes, or disturbed by eddies. At such times the sight may be somewhat indistinct, and the direction of the wing, the size of the body, and the exact shade of colour may not be correct; but this is

not always the case : it is often necessary to fish in streams undisturbed by wind or eddies, and what then becomes of the ill-shaped type ? That fish have exquisite distinctness of vision is evident from their entire refusal to rise even at any other fly (although at some times a favourite) when a still greater favourite is on the water. We have frequently changed and re-changed our flies without taking a fish when they have been fully on the feed and rising all around us, and at last have only succeeded by sitting down and making an exact imitation of the fly on the water, with the smallest increase of colour in the type. The same must have happened to hundreds of experienced fly-fishers. When trout have been long prevented from feeding, they become ravenous ; and it often happens that previous to indifferent weather also, they appear to have an increase of appetite, and will take almost any imitation that is offered ; but this exercise of caprice, or of a peculiar call for food, forms no argument in favour of a want of nicety in the construction of our flies. These are accidental circumstances in the habits of fish, and a panner taken at such times is only a proof of the folly of the prey, reflecting little credit on the captor. But when food is plentiful, but little wind stirring, and the water clear and low, then the well selected and accurately coloured fly shines conspicuous, and its maker stands proud amongst his fellows. If the angling travel be extended to the northern districts, where the waters are wide and often shallow, and in fine weather as clear as crystal, it will be found that it is more necessary to be particular as to the true colour of the fly than either to its figure or neatness.

3744. *Strength in the workmanship* is a most important consideration ; for a fly to be at once light, neat, and yet firmly made, is the *acme* of dressing. Much must depend on the silk, which ought to be very fine and yet sufficiently strong to bear being drawn very tight. Well waxing the silk is of great consequence to the strength of the work, but both these will avail little if the utmost care be not taken in the ties or fastenings off, and the young angler should practise the hidden or invisible knot until he be quite perfect at it. It is in this particular that the London dressed flies have too often been complained of. If they were always as strong as they are neat, it would be better for the anglers who use them, and there would be still less occasion for the domestic manufacture of them than there is at present. Every knot should be varnished.

SECT. IV. *General introductory Remarks on the Number and Arrangement of Artificial Flies, and on the Seasons of the Appearance of the Natural Flies, which they are intended to represent.*

3745. *The number of artificial flies* required for the practice of fly-fishing is very differently estimated by different writers. The angling patriarch, Walton, gives a list of *twelve* "reasonable flies," which his friend Cotton judiciously doubled. The experience of a century and a half has since greatly increased the list, as more extended observation proved the universality of appetite in fish for the insect race. It appears therefore strangely retrograding to find a writer of such credit as Salter contracting the required numbers into the confined limits of "red and black palmers, red and black hackles, ant-flies, the May-fly, stone-fly, gnats, a red spinner, and a moth." A fly-book so furnished might secure a medley of roach, dace, chub, and perchance a few unhappy trout, which had strayed out of bounds ; but the exhibition of both baits and fish would not be very creditable to the professed fly-fisher. We have no doubt that many of the flies which the books of some excellent anglers contain, are seldom called into action ; but as they are, when collected, not very cumbrous in carriage, eat and drink nothing, and may now and then suit the "lucky occasion," we see no disadvantage, but applaud the judgment of those anglers in being furnished with them. In our own fishing practice we have met with numerous gratifying proofs of the benefit of an ample store ; but infinitely more have we felt the benefit arising from an ability to increase our stock from our own resources whenever we found occasion so to do. It is utterly impossible to pursue fly-fishing with zeal, and such success and credit as to mark the proficient, without either having the skill to dress flies, or possessing a well arranged full collection, and the skill will be more particularly necessary in angling travel, where even the greatest variety will hardly be adequate to occasions which may occur. It is not however quite the same with the angler who confines his fishings to an immediate neighbourhood. Here, a moderate share of observation made during one or two seasons, will inform him what flies are common to the waters in their different seasons, either as indigenous from aquatics, or as accidentally blown from the land.

3746. *It is said that more than a hundred artificial flies stand on our books.* We have ourselves, we believe, dressed nearly that number of varieties ; but we by no means recommend so many for general use, although perhaps not one of such a list but might be usefully employed on particular occasions.

3747. *We have divided the artificial flies known among anglers,* and noticed by writers, into three lists :—*The first* is composed of such flies as are of acknowledged general use, on most of the British waters. These, as being well known to ourselves, we hope to render familiar to the angler by illustration of the figure, and by a sketch of the individual history of the originals, and the angling uses of their artificial representatives. To these are also appended a few which, although they may not have escaped being employed by anglers, yet, as far as we know, have not been noticed by any other writer, and yet from their general utility are well worthy of introduction into our books. *The second list* presents the artificial flies recommended by other writers, some of which are of arbitrary adoption ; many are well known, but it is by other names ; a few of them are local ; and some are so obscure in name, description, and directions for making, as to leave us room only for conjecture. *The third list* is composed of such as are found useful in fishing for salmon, sea trout, and the other large varieties of this favourite of the British rivers. As the flies which compose this list are many of them the creatures of fancy, or if representatives are arbitrarily dressed, without reference to critical exactitude, we have chosen a separate niche for them. We are not so bigoted to numbers as not to consider the flies of the first list sufficient to find employ for most anglers ; and we think that, with occasional modifications in the dressing of them, the variety will suit most seasons, most waters, and most of the fish which rise for flies in the British waters. As an addition to the size and colour of the insect representatives beyond what this list specifies is found to be necessary in the taking of salmon and sea trout, they are provided for distinctly.

3748. *To arrange the angler's list of artificial flies* in such a manner as would at once clear it from the confusion that now envelopes it, has long been our anxious wish. Angling, but particularly fly-angling, has been our favourite recreation ; and when we engaged to write upon it, we hoped that our own notes, and the de-

scriptions of other piscatory writers, would have made a systematic arrangement of the living objects connected with it a less difficult task than we have found it to be. The objects of capture, the fishes themselves, had most of them been well described by naturalists; the practice of angling as an art has been brought to considerable perfection; but the knowledge of the natural history of the insect baits, particularly of those connected with fly-angling, is but little more advanced than it was two hundred years ago. It is a natural inquiry, if angling be, as its advocates boast, a recreative amusement peculiarly sought for and encouraged by characters eminent for science and intellect, how is it that the living objects of it have not engaged more scientific attention? We can only suppose that this neglect has happened with them as with ourselves; and that, however each passing opportunity has been seized for observation of the works of Nature on most other occasions, such are the fascinations of the pursuit of fly-fishing, that its practice absorbs all the energies during its continuance; and that the living objects, at other times individually interesting, are now considered only as they are found conducive to the sport. Our own notes of many years present ample details of days, months, and seasons of fishings, and are most accurate on the weight, number, and variety of our captures; the baits used are also stated with precision, as hints for our future guidance. Occasional inquiries and observations are interspersed on the natural history, habits, and manners of the fishes captured, and of the worms, flies, &c. by which they were enticed; but we regret that these latter are vastly inferior in number to the others, not because the subjects did not then interest us, but because we were, as soon as we reached the water, too much absorbed to pursue any inquiry not directly connected with the sport. What we did however we hope will somewhat aid the cause, and the importance of the subject to the character and the practice of the art is now so impressed on our minds, that we venture to promise to neglect no future opportunities which may present themselves. What we have stated, however, in the way of excuse is less for ourselves than for others.

3749. *To the fascinations of the mechanical part of the pursuit* it is owing that the scientific consideration has been so much lost sight of by persons from whom so much more might have been expected. The author of *Salmonia*, who must be acknowledged as one of the greatest philosophers this country ever boasted, had been an ardent fly-fisher many years. We have seen him on the waters between Watford and St. Alban's, to which he alludes in his work, and have heard of his warm attachment to the sport from the gentleman at whose mansion he visited, and in whose waters it was that he so often fished; yet even his inquiring mind appears to have led him little farther on this subject than to convince himself that the principal flies he used were drawn from the genera *Phryganea* and *Ephemera*; and he even contents himself with a few general hints relative to the habits and metamorphoses of these alone, which apparently form the sum of his researches into the physical history of the living fly-baits, a branch of knowledge which however we make no doubt he would be the first to admit as most essential to the perfect attainment of the art, and most creditable to its possessor. In the application of our observations to dispel some of the obscurity which has so long hung around the fly-angler's vocabulary, we may assert that, with the honourable exception just alluded to, we have in vain looked to reap any material benefit from our predecessors in this pursuit. The errors of the earlier writers have been faithfully copied by those who followed; and where a gleam of originality was attempted, it seldom did more than raise our hopes, and increase the sense of our wants. Be it again remembered, that we now speak only of the natural history as connected with our art. On the practice of angling, we have works which do infinite credit to their authors, and have tended to bring the art to its present state of perfection. But that the natural history of the objects connected with angling is in a state little creditable to its professors, must be evident to those who have compared the various written accounts of the animals included in that description. Had we originally given the list of flies used by ourselves, named and arranged according to their several places in the Linnæan catalogue, with as much of their natural history as we had traced, we should have saved ourselves many weeks, nay, we may truly say, some months of labour and research; the result of which inquiry has led us to the conclusion, that for the present we must leave it, if not wholly, at least in a great measure, uncleared from its obscurity, errors, and contradictions. If it were consistent with the nature of our plan to consider our writings as wholly original, we should have also attempted a nomenclature altogether new for the living baits of the angler, at once expressive of their natural character, uses, and natural classification. But as an encyclopædian writer, it best becomes us to follow the lead of others, assisting the general cause by little more than by our incidental remarks. But that we do not without reason complain of the discordances in the accounts of the angling flies as they appear in the writings of our best authorities, or of the want of even common acquaintance with their natural history, let the following exemplifications testify:—

First with regard to the dun fly. Mr. Daniel, from whom, by the manner of getting up his work, as well as from his known attachment to rural sports, much was expected beyond mere compilation, and from whose scholastic habits we might at least have expected the detection of gross errors, is found to describe the blue dun fly as produced from a caddis, although it had long been known that all the duns belong to the *Ephemera* or day-flies, whose origin, although aquatic, is not from a cad-case. From a want of examination little creditable to such a work, and depending on sources of information grossly erroneous, he is also led to state that the cricket, or water creeper, as it is called by anglers, "cannot be the same with the stone bait, or in fact with any cased worm" (fly larva). If there wanted any proof of the necessity of our giving to the natural history connected with our art the benefit of observation and inquiry, so glaring an error as this would furnish it. Were more proofs wanting, we might cite the *North Country Angler's Own Book*, who informs us that the larvæ of the dragon-fly are leeches, and that the whirling dun springs from a cod-bait or caddis-fly, while at the same time he dresses it aright as an ephemera or spring-fly. This is so glaring, that we might have supposed it a verbal error only, had he not been so particular in describing the circumstances connected with its history. Bainbridge gives figures of what he calls gnats, which have four wings; whereas it is notorious that the *Culex* or gnat, as a dipterous insect, has two only. Even Salter, in his introductory plate to fly-fishing, presents a palmer with wings, and an ant-fly with tags to its tail. Bowler calls the May-fly (*Ephemera vulgata*) a libellula or dragon-fly; and Taylor says the spider-fly has no wings at all.

3750. *Of the utter discordance in the names and descriptions given by different writers to the various angling flies, many glaring instances occur.* In Bainbridge the great red spinner is made a case-winged fly, and confounded with the fern-fly of others. In *Salmonia*, and in *Bowlker* also, it is justly described as a summer dun (*Ephemera*). *Bowlker* says that the wings of the coudung-fly stand upright; it is one of our most common flies, and its wings lie remarkably flat on its back. *Salter* describes the coch-a-bonddu as the same with the early red or four-winged fly; nor are the diversities of the characteristics of this Cambrian favourite, coch-a-bonddu, confined to these discrepancies. By one author it is identified with the Marlow-buzz, by another with the fern-fly, and by a third with the Welshman's button. This name, Marlow-buzz, is also another of the stumbling-blocks to anglers, signifying with some a beetle, and with others a soft winged fly. The fern-fly of *Bowlker*, a small summer beetle, is with Bainbridge a fly with soft wings. The willow-fly of Sir Humphry Davy (a phryganea) is a caddis-fly with flat wings; in Bainbridge it is a yellow dun, and one of the *Ephemera* with elevated wings, the immediate precursor of the May-fly. Again, according to *Bowlker*, the willow-fly does not appear until September. *Taylor* confounds the stone-fly in its pupa state with the spider-fly (*Tipula*) and thus commits two errors at the same time, saying first that it creeps out of the sand, as authors describe the spider-flies to do, and next that it has no wings, as is the case with the pupa of the stone-fly. Of the multitudinous names by which different authors describe the same fly, many instances will appear in the numerical list which we are about to offer.

3751. *The difficulty of characterising the winged insects used as baits by the descriptions given by authors on angling must therefore be apparent.* We hope, however, that hereafter those which are in very general use, and of regular and almost universal occurrence, will be placed in their proper situations as entomological members. We cannot answer for the critical accuracy of all those we have ventured to class; but we are open to correction, and invite it. Much time will probably elapse before even the whole of the angling aquatic flies are reduced into systematic order. As to others which are occasionally taken by fish, they embrace almost the whole insecta. If a practical angler were to be accompanied through a season by a naturalist so devoted to the study of entomology as not to be diverted from research by the fascinations of the sport, much might be done; but from the angler himself, the work is likely to be effected only by slow degrees. A mite, however, from each would make a mountain in the end, as a penny contribution will raise a colossal statue to a public benefactor.

3752. *On the merits of individual flies, as stated by writers, the young angler is to bear in mind that prejudice may occasionally appear; but it has oftener happened that locality has influenced the terms in which either the favourable or unfavourable character has been represented.* The *North Country Angler*, when he first used the naked stone-fly or water cricket, was led to think he had discovered not only an inestimable bait, but almost an undescribed species. In the midland counties it is not very highly prized, and around London it is held very cheap. As a nondescript, it could only have been so to anglers of very limited observation, and of less reading; for we find it accurately described both by *Walton* and *Cotton*, and it was known long before their time. Particular flies are more common in some districts than in others; and where they are so, the representative may be expected to prove more killing, so it becomes extolled without limitation. The angler of another district finds it almost useless, because the fly itself is unknown to the fish there. Fond as the trout are of the May-fly, it is probable that he who tries the Wandle with his well trimmed drake will not raise a fish, for on this river the May-fly does not appear.

3753. *The decrease of aquatic flies must have been observed by every angler of any standing, drainage and cultivation having proved unfavourable to their production.* This is doubly to be lamented by him, for it is not enough that trout and grayling are not one-fourth as numerous as they were, except in strictly preserved waters, but even the means of taking such as do remain are lessened also. "It appears to me," says the author of *Salmonia*, "that since I have been a fisherman, which is now the best part of half a century, I have observed in some rivers where I have been accustomed to fish habitually, a diminution of the quantity of fly. There were always some seasons in which the temperature was favourable to a quantity of fly; for instance, fine warm days in spring for the grannam or brown fly, and like days in May and June for the alder-fly, May-fly, and stone-fly: but I should say that within these last twenty years I have observed a general diminution of the spring and autumnal flies, except in those rivers which are fed from sources that run from chalk, and which are almost perennial, such as the Wandle and the Hampshire and Buckinghamshire rivers: in these streams the temperature is more uniform, and the quantity of water does not vary much. I attribute the change of the quantity of flies in the rivers to the cultivation of the country. Most of the bogs or marshes, which fed many considerable streams, are drained; and the consequence is, that they are more likely to be affected by severe droughts and great floods—the first killing, and the second washing away the larvæ and aurelias. May-flies, thirty years ago, were abundant in the upper part of the Teme river in Herefordshire, where it receives the Clun: they are now rare and seldom seen. It may be observed, that most of the rivers of that part of England, as well as of the West, with the exception of those which rise in the still uncultivated parts of Dartmoor and Exmoor, become after heavy rain rapid and unfordable torrents, while in dry summers they are little more than scanty rills. Exmoor and Dartmoor, almost the only great remains of those moist, spongy, or peaty soils, which once covered the greatest part of the high lands of England, are becoming cultivated, and their sources will gradually gain the same character as those of our midland and highly improved counties."

CHAP. XI.

LISTS OF ARTIFICIAL FLIES.

3754. *The time of the year for fly-fishing*, like the number and variety of the flies to be used, is not limited to any fixed period. Salmon, trout, grayling, and all those fish which take winged insects, may be occasionally caught even in the winter months by them; but these are accidental circumstances. In January even, gnats (*Culices*) and some other minute flies (*Tipula* and *Musca*) are seen playing over the water in bright open weather. The observant angler must have remarked that the winged insects of the winter months are minute, and usually very dark in colour. The author of *Salmonia* attributes this to a preservative intention of Nature, and supposes that they escape the influence of frost by the effects of light on their black bodies. In their hovering over the surface of the water, which being liquid is above the freezing point, they must also be secured from destructive cold. The minute flies hinted at, if the angler be disposed to throw his line at this inauspicious time, may be traced in the practical directions for dressing *duns* for early spring.

3755. *In February* the same flies continue to appear, and the meagre list is now somewhat augmented if the weather is very open, and gives promise of an early spring. The dark fly, a phryganea of the next month, and one or two varieties of dark olive *Neuroptera*, are now seen on the water for two or three hours in the middle of the day. The *cowdung*, (*stercoraria*) is also sometimes seen towards the last week. All these will be found among the flies of March; but such is the state of the trout at this early season, that they yield little pleasure in the taking, and seldom rise at the fly.

3756. *March* is generally considered as the commencement of the fly-fishing season for salmon, trout, and grayling; but unless the spring be very forward, little sport may be expected until towards the middle of the month, and not even then in most waters. But generally speaking, from the middle of March until August, salmon and trout may be fished for with the fly with every prospect of success. As regards grayling, although they begin to rise at the same time with the trout, their best season does not commence until late in the summer. In the hot months fly-fishing is principally confined to the mornings and evenings, except on cloudy and windy days, when it may be practised throughout. In September and October, the chance of sport with salmon and trout lessen every succeeding day, but with grayling it rather increases until November.

3757. *The difficulty of presenting a satisfactory catalogue of flies dressed to ensnare fish* is very great, as will be apparent when we consider that of these there are upwards of a hundred which enter the list of various writers of different localities; and as the fly of one author bears a different name, according to the locality he lives in, from that of most other authors, so it is most likely that neither the names nor the descriptions agree, and thus endless error is propagated. Although we have in the list we offer endeavoured by adding to each fly the different names it is known by, yet we are by no means assured that we also have not unintentionally increased the mystification. It has been our wish and our endeavour to present a tolerably clear *exposé* of the most popular flies in use among anglers throughout the United Kingdom, with the various names under which each passes in different places. We have also figured the *dressed* representatives of the most popular and important flies which should garnish the angler's fly-book when he goes abroad on his sporting travels, be it in England, Ireland, Scotland, or Wales; all of which are such as we feel assured, as well from our own experience as from the accounts of others, are calculated to take every variety of *fly-taking* fish, from the noble salmon to the humble and diminutive bleak.

SECT. I. *Monthly List of Artificial Flies.*

3758. *This list* embraces all the flies of acknowledged general use in the waters of England, Ireland, Scotland, and Wales, which can be characterised with precision. We have to observe on it that the times of the appearance of the natural flies, as stated by us, are not always in agreement with the authorities whose method of dressing or whose remarks we may quote; but they are given as the results of our own observation principally, for we find the accounts of writers to be so much at variance with each other, that we are convinced they have been given, not as the effect of a general accumulation of facts, but as the result of observation in one or two instances, influenced as these are likely to have been by accidental agencies. The temperature of the atmosphere, the winds, the moisture, or the dryness of the air, will hasten or retard the appearance of winged insects, which consequently must be very variable; and those causes are likely to operate differently in different districts. We have drawn our conclusions on the contrary from notes made during a series of years, which have enabled us to form a moderately correct average of the time of the *coming* of each fly *on the water*, allowing for contingencies of season, which often makes not less than a fortnight's difference in their evolution; and as we have not been

confined to locality but have extended our fishings widely, so our statements may be supposed to be tolerably correct. We have likewise to a certain degree endeavoured to place these insect baits in the order of their succession in our tables.

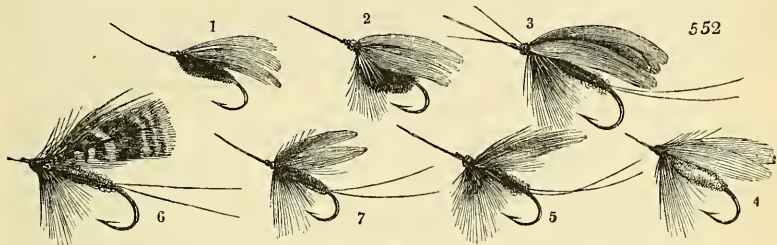
3759. *To each month we have appended a summary table, by turning to which the angler may at once see what flies are proper for the different times of day, the various alternations in weather, and for the altered states of the water.*

SUBJECT. 1. *Artificial Flies for March.*

- No. 1. Black gnat.
2. Early small black fly.
3. Alder, or red fly.
4. Cowdung-fly.
5. Dark dun.
6. March brown.

- No. 7. Blue dun.
8. Early dark bodied willow-fly.
9. Black palmer-hackle.
10. Brown palmer-hackle.

- No. 11. Red palmer-hackle.
12. Golden palmer-hackle.
13. Peacock palmer-hackle.
14. Golden peacock palmer-hackle.



FLIES FOR MARCH.

No. 1. *Black Gnat (Empida).*

Wings.—Light part of the wing feather of any darkish dun coloured bird, those of the starling or hen blackbird being as good as any. To lie flat.

Body.—Dressed minute, rather short, with a small black ostrich harl, or in lieu of it black mohair. Hook, No. 9 or 10.

3760. *The black gnat*, dressed as above, is one of the earliest flies, but is so minute that it can scarcely be imitated of too small a size, or dubbed too thin and fine. As it will hardly admit of any thing being added for legs, we have sometimes found it convenient to dress it as a simple hackle-fly with a dark grizzle feather. The reason for this instruction is, that a reference to the natural history of this fly in our entomological detail will show, that its legs are barred with white, which the grizzled hackle will represent well. We have used it both as a winged fly and as a hackle with success in February from eleven to two o'clock, and in March from ten to four. In the summer months it will also kill when the water is fine and low. In gloomy weather it may be used the whole day through, but in bright days in the morning and evening only. After a shower it sometimes proves very killing for an hour or two, until other flies begin to show themselves and supersede it. Grayling, as well as trout, will occasionally rise to it at this early time of the year, and as long as it lasts. Successions of this fly appear throughout the whole season, but what is often dressed as a gnat is a minute *Tipula*, which being also aquatic, is as readily taken by trout and grayling as the other, and is dressed like it also, but on a hook one size larger, as No. 8. The *midge* is the smallest variety of gnat, and must be dressed on a hook, No. 11 or 12. The London fly-dressers are apt to call every small fancy dressed fly by the name of midge. The starling's breast feather, wound on as a hackle, dresses the above fly well.

No. 2. *Early small Black Fly.*

Wings.—Starling or hen blackbird's wing feather. To lie flat on the back.

Body.—Dressed rather full and short with the same materials as the last fly, except that the silk used in this should be of an iron blue colour

Legs.—A very minute dark hackle of a copperish hue. Hook, No. 10.

3761. *The early small black fly* is a novelty to the list, as we have never seen it described before. Its habits lead it to damp marshy situations, and it is therefore sometimes to be seen on the water in very open weather, towards the latter end of February; but its usual time of appearance is in March, during which month, and April also, it is not uncommon, and is often freely taken, but it afterwards becomes scarce: we have, however, occasionally met with it in the summer months in our rambles in the woods, and in moist and close copses. Its principal value consists in its early appearance, when our choice of flies is not great. Grayling, particularly the smaller ones, take it more readily than trout; but the latter likewise will rise freely to it in some gloomy days, and more readily when a mild warm breeze curls the water: we have not found it so successful when dressed as a hackle,

No. 3. *The Early Red Fly (Perlida).*

Wings.—Red feathers of the landrail's wing, or the red tail feathers of the partridge for the upper wings; the starling's wing will furnish the lower. To lie flat.

Body.—Any dark claret coloured fur, as that which a brindle cow yields, and that of a copperish hue from a dark brindled pig, or a brown red spaniel's ears: mix any of these with camlet, if the exact colour cannot be obtained.

Legs.—Of a dark red hackle, stained claret.

Antennæ.—The *antennæ*, or horns, and the *whisks* also, should be of any firm tapering hair of the colour of the legs, the first shorter, and the last longer, than the body. Hook, No. 9.

3762. *The Early Red or Old Joan* is also known as the orange tawny or orange brown, camlet-fly, withy-fly, and bastard caddis. It has likewise other names. Taylor calls it the dark claret, and in dressing it uses the darkish fur of the hare's ear mixed with any claret coloured dubbing for the body, the upper wings from the partridge's red tail feathers, the lower from the starling. "It is in season," he says, "from the latter end of February to about a week in April, and is the first fly that begins the diversion of fly-fishing. Some call it a red fly, and make it so, but they are mistaken: it is best as a dropper, where you fish with two or more flies." Bainbridge calls it a dark fly which appears early in March, and sometimes in February, when it is used all day with great success, and often for grayling as well as for trout. He uses fur from a black spaniel, with a small quantity of claret coloured camlet for the body; wing feather of a fieldfare or hen blackbird, and a dusky hackle for legs. Mr. Lascelles calls it erroneously a red dun; but his mode of dressing it for some waters, particularly the Welsh rivers, is good:—"The body is of copper coloured hog's fur from near the tail, and the wings either of a dark mottled red feather of a mallard, and the same coloured hackle for legs, or a dark grizzle cock's hackle, simply over the whole, on a hook, No. 6. His wings lie close on his back; and from twelve till one, upon rapid streams, he will show good sport." Cotton calls this the spring black, and describes two of them, one of which he dresses with black wool from a sheep's face, with or without a greenish peacock's harl for a body. The wings, he directs to be made of the grey feather of a mallard. For the other variety, he uses the very blackest part of a hare's sent, with or without a peacock's greenish harl for a body, and a fieldfare's feather for wings. He observes also of them, that they are best taken in bright weather.

3763. *A caddis-fly* of the same description appears again in September, but in the spring very great numbers are seen flying about the alders and willows which overhang the water, on the leaves of which they deposit their eggs: these eggs becoming hatched, the young larvæ fall into the water, to which they immediately become naturalised, and set about framing themselves each a protecting case.

No. 4. *The Cowdung-fly (Scatophaga stercoraria, &c.).*

Wings.—The landrail's feather dressed a little longer than the body. To lie flat on the back.

Body.—Yellow mohair, with a little brown fur to take off the bright glare, and give the whole a dirty orange tinge: the body should be dressed tolerably full.

Legs.—A ginger hackle, of a similar colour with the body. Hook, No. 7, 8, or 9.

3764. *The cowdung-fly* is justly prized for its qualities, which are such as deserve the highest commendation as a standard and almost universal fly. The female is of an olive hue. If the weather be open it appears very early in this month; and as there are some 20 species, it is to be seen of all sizes. This proves advantageous to the angler, for if the water be fine and low, he can use them as small as he pleases without outraging nature. It is to be observed, that as they are not aquatic, they are not often seen on the water but when blown there; and consequently they are most successfully used in blustering weather, and in the rivers of midland counties in particular, which are usually skirted by grass fields, they are taken with great eagerness at all hours throughout the whole fishing season; but, as might be expected in situations where they are less indigenous, the imitation is less freely taken. As they are so valuable, it is of consequence to dress them true to colour and shape. The original may be seen in clusters on every cow dropping, when it will be observed that their *wings* are very transparent, which should be carefully imitated by a thin almost diaphanous feather, with a glossy reflection from it. The *body* should be rather full, and rough with its dubbing, the colour of which should be of that tawny hue seen in the majority of these flies, but which is not, however, always imitated well by the fly-dressers: and for this reason we have usually preferred to make our own cowdung-flies from some wool which we dyed ourselves for the express purpose; for we consider that there is no fly in the whole catalogue which demands for its imitation exactness, both in shape and colour, more than this. By some extraordinary mistake, Bowlker describes this fly as having upright wings; and as many of the London fly-makers dress their flies by his directions, we need not wonder that they are often bought with their wings unnaturally staring outwards. We have killed grayling with it as well as trout; but for the

latter it is in the midland counties a most killing bait. The extreme eagerness with which almost all the fly-taking fish rush on the cowlung-fly is a proof that it is not essential to their ardour in taking flies, that the origin of such flies should be aquatic, as some have asserted. Few winged insects, if we except the May-flies, are so acceptable to them as this cowlung-fly, which we know is found on the excrement of animals, particularly on that of the bovine kind; and hence its characteristic and universally acknowledged cognomen of *cowlung-fly*. It is therefore a deserved favourite with most early fly-fishers. In windy weather at this season the observant angler will see the fish congregating towards the surface, as though waiting to give them a cordial reception, which it cannot be denied they do, when they receive them into their bosoms. As anglers we are therefore much indebted to these flies, for they are certain in their appearance throughout the whole of the spring, the summer, and the autumn months, and they are fortunately very hardy, and hence are equally common in foul or in fair weather; nor is it only a favourite at the times we hunt, but is acceptable in all, for we have seen them pursued with avidity, when other favourites were neglected; indeed, we hardly know one, with the exception of the above named, that may compete with them. This fly is also easily dressed, and will be found equally killing, either with or without whisks, so that the orange of the body be sufficiently striking.

No. 5. *The Dark Drone (Dolerus niger)*.

Wings.—An old cock starling's wing feather.

Body.—Dark mole or dark rabbit fur, or, in default of these, that of the water rat may be substituted; in which latter case a little deep coloured mohair will be required to produce the proper hue, but in the former mix a little reddish brown mohair with either of the furs used. The silk employed in forming this fly should be orange colour. Hook, No. 8. or 9.

Legs.—A minute, dark, dun hackle.

Tail whisks.—Any two minute tapering hairs of a proper length, and deep brown colour.

3765. *The dark drone* is called also the great dark dun. By Taylor, whose method we think good, it is named the blow-fox. He uses the starling's feather for *wings*; the *body* he makes of fox fur, collected close to the skin of the shoulder, mixed with some from the black tail of a rabbit, and a little pale straw coloured mohair. He directs to proceed with the wings and body in the usual manner, until the dressing is carried low enough to put in the fork, which he recommends to be of two fine hairs that grow next the skin of a monkey, where the outer ends are yellowish. These, he remarks, are of a fine colour, and nothing can be found so good a match for the body of the fly. We have found it in season from the latter end of February till the end of April.

The Dun Flies (Ephemeridæ).

3766. *The small ephemeral flies*, called *duns* in the angler's vocabulary, are very important to his practice: the entomological outline will show that they are very numerous also. A few, as the May-fly, the March-brown, and the August dun, are large; most of the remainder are very small, but are yet so attractive to fish, particularly to the trout, that in the counties which are favourable to their propagation and increase they form the sheet anchor of the trout fly-fisher's practice. It would be difficult in the extreme for the most attentive, either angler or naturalist, to designate or characterise them individually, from their numbers and varieties. The short period of their existence, limited to a few days in most, and in some to a few hours only, renders a constant succession necessary to fill up the void. They have been grouped under the comprehensive term of *duns*, which has become so conventional, that it would be extremely difficult to disjoin them; although, whoever examines the yellow and the orange varieties, which equally pass under the same name, will find they have little of a dun hue about them. These are, however, extreme exceptions; for it is very certain that, in most of the other varieties, there is a predominating *blueish grey* tint. Were it not for the successional changes which take place in their tribes, they might perhaps be conveniently and appropriately divided into brown, red, and yellow ephemera; of each of these the modifications are almost innumerable.

3767. *Of the brown ephemeridæ or duns*, some are very dark, approaching a claret colour, which is best imitated by a dark blue mixed with a reddish brown. These are usually found in the earliest part of the fly-fishing season, and to them usually succeeds a mixture of red and ash coloured varieties, followed by new series, which are gradually softened into the different hues of dun, orange, or yellowish ash. Of the true *dun ephemeral flies*, the variety is equally endless, from the early blue dun, which may be considered as the *type*, through all the gradations of iron blue, violet blue, ashy grey, and pale blue. The yellow ephemeral duns are still more difficult to define, as there are few even of the former but what exhibit a yellowish intermixing tinge about some parts of their little frame. Often it appears in exquisite orange bars over the abdomen; but they derive their character from the yellow being more strictly predominant. In some may be perceived a slight mixture of bright yellow, with a larger of ashy dun. When both colours are bright, an elegant tint of

green is produced. In others, again, as the little yellow May-fly, bright yellow prevails without mixture. Of all these the series are wonderfully varied, some having orange bodies and dun wings, while in others the orange is shed over the wings, and the dun body serves as a foil to them.

3768. *The successional change of colour* which takes place in the species of *Ephemerida* as they advance from the spring to summer, and as they retrograde again towards autumn, has not escaped the notice of anglers; and we find in most of the directions for fly-dressing the subject practically glanced at; but no systematic arrangement of the series has been attempted. All that has been hitherto noted is, that in the early spring months the predominating colours of the winged insects which are seen near the water is almost black. The early duns are of a very dark olive, whose successional varieties, as the season advances, assume a lighter brown, while others shine in a heavy blue, until at length yellow, orange, or cinnamon, decks the former, and pale blue the latter, intermixed with others apparently compounded between these. With one exception, that of the blue-blow, the ephemeræ appear invariably to become of a lighter hue as warmth and light increase; and we see the summer duns dressed in bright yellow, orange, red, and cinnamon. From these fresh relays appear; and as the season advances, they again assume the varying shades of red, brown, violet, and claret colour. *Males and females* often differ widely in the same species.

3769. *The daily appearance of the Ephemeridæ*, as well as the colours they shine in, are also under the influence of times and seasons. Excess of cold, as well as of heat, is unfavourable to them: thus in the depths of winter they are not seen at all; in spring they do not show themselves until towards noon; while in the meridian splendour of the summer days they (to avoid the heat) come out in the mornings and evenings principally, and are hardly seen in midday. A kind and provident Nature so suits the supply of her creatures, that her economy may never be disturbed. If these ephemeral flies appeared all of them at one time, the air would be vitiated, and the birds and the fishes which live on them would be glutted to satiety and fatal repletion at one time, and at another might want the necessary support. But we see species after species arrive in succession to fill up the breaks made by the last; and that no considerable interruption may occur by variation in temperature and changes in weather, some are destined to appear when cold and storms prevail, while others require cloudless skies and genial warmth to draw them from their seclusion. The whirling dun thus frolics in the gale, the red spinner dances in the sunny beam, and the blue-blow braves the chilling day. The observant angler makes a practical use of this, and frames his mimic art accordingly. The males appear a few days before the females.

3770. *The older writers* generally characterised these flies by arbitrary names, and these were unfortunately absurd and unmeaning. Later authors have named them more according to their own view of their colours, in which, as they have been no less arbitrary than their predecessors, each naming them according to his own fancy or opinion of shade, so between the one and the other there are not less than fifty names, and twice as many or more dun types. In the formation of our catalogue, we have therefore found some difficulty in designating these tribes. We regret to call them by such trivial appellations, but we do not at present think ourselves authorised in rejecting the names in common use: we however, in selecting from the popular nomenclature, have endeavoured to choose those which best characterise the insects, and are best known.

No. 6. *Large March-brown Dun (Batis longicauda).*

Wings.—Mottled feather from the tail of a partridge, or hen pheasant. Set upright.

Body.—Light fur and red squirrel's fur mixed, and ribbed with yellow silk.

Legs.—A grizzled dun hackle for legs. Hook, No. 6.

Tail whisks.—Two fibres of the feather the wings are made of.

3771. *The March-brown* is the cob-fly of the Welsh anglers, the turkey-fly of Walton, the dun-drake or brown caughan of Taylor, and the March-brown of Bainbridge, who recommends the mottled feather from the ptarmigan or partridge, in its summer plumage, for wings; the body of hare's ear, with yellow worsted. He also says it may be dressed as a hackle, in which we agree with him, particularly when the exact partridge feather is not at hand; for it is only by this mottling that any just representation of the fly can be made. Walton's dressing is, "Body, brown foal's hair; tops of the wings of a woodcock, some ruddy, others grey, well mixed together; warp with pink and yellow, or pink and light coloured brown silk, twisted together; wings, of cock pheasant's feather." Bowler observes on this fly, that it continues to the end of April. Its mottled wings stand full as much, and we think rather more upright than as seen in the figure offered of it; and no feather suits the purpose better than those above noted; although Bowler recommends the pheasant's wing, which is not equally characteristic with either the wing feather of the partridge or ptarmigan, particularly the former; and as this fly is a very important one to the angler's success, we think he cannot be too particular in his dressings of it. The tail whisks, also, we were always very solicitous to dress with three mottled fibres. It is, we repeat, an important fly to the angler. The female is much lighter, with a greenish tint.

3772. *We have known the dappled hen pheasant's wing feather successfully substituted for wings*; but nothing is equal to the partridge feather. During five successive years, fishing in a branch of the Colne, this fly appeared, on an average, two days before the middle of March; but not in any great numbers, for it is a tender fly, and is not seen at all thus early in the season if the days be cold. Bainbridge's account is so much in accordance with our own observations, that we transcribe it: — "This very excellent fly generally appears about the middle of March, and is strongly recommended as a good killer from eleven until three o'clock. Large quantities of these beautiful insects sail down the streams in succession, and invite the trout to action. Their wings are upright on the body, as shown in the plate; and whilst they are on the water, it is almost in vain to attempt the use of any other fly. Therefore, as they vary in the shade of the body, it is advised to use *three* flies of this form, but of different sizes and colours, at the same time, which will insure success to the angler." In Wales, it is found to be one of their most killing flies, and to take the largest fish. In fact, it appears to large rivers what the green drake is to small ones.

No. 7. *The Blue Dun (Ephemeridæ).*

Wings. — From the tit-mouse tail-feather, or the blue part under the male widgeon's wing. To stand erect.

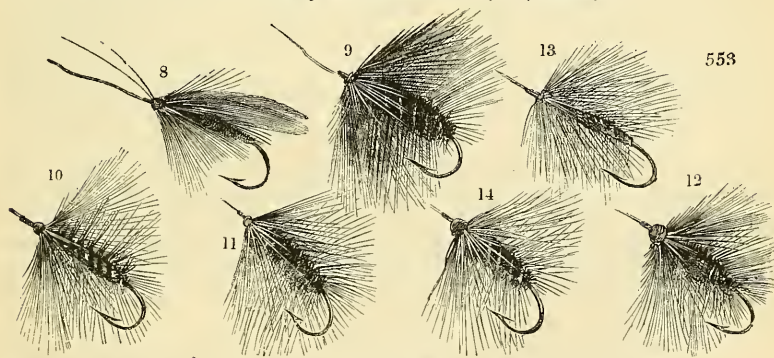
Body. — Fur from the water rat or hare's ear. Yellow silk may be used for whipping, if the exact shade of the natural fly cannot be obtained.

Legs. — A very fine hackle, as near the colour of the other parts as it can be procured.

Tail whisks. — Two blue hairs. Hook, No. 9 or 10.

3773. *The blue dun* is the blue fox of Taylor, and the bloa watchet of Cotton. Bainbridge observes with great truth that it is extremely difficult to find a feather of the exact shade, or sufficiently delicate in its fibre for the wings of this minute fly. It was for this reason we always ourselves dressed it with the tail feather of the tom-tit, until we obtained some fine blue coloured feathers from a West Indian creeper, which answered our purpose better than any feather we had before or since met with. Bainbridge, to obviate the difficulty of finding the proper tint, recommends to make it of a pale dun hackle, and to employ it as a dropper; but as it is principally useful in cold days, what is to be made as the stretcher to it? It is true that in the season of the great whirling dun, or in situations where the coddling is a favourite, either of these may be advantageously used for that purpose; and we wonder that the acuteness of Bainbridge had not led him to a similar conclusion. It is a singular but a fortunate circumstance for the angler, that this fly and the dark should delight to appear on cold windy days, and that it should be seldom seen on warm ones, which are the principal times when the other varieties of the dun are on the water in numbers. It comes on early in March and continues through April, when it is succeeded by a race of flies in which the blue dun tinge predominates in various proportions. It is well therefore to be prepared with gradations of this fly, of which the ashy dun appears the first: these the angler's sagacity will prompt him to look for in the original fly, and afterwards to make his representatives accordingly. In favourable days, the blue dun will kill in all the fishing hours, particularly in April, but best towards mid-day. It is likewise almost universal on the British waters.

No. 8. *The early dark-bodied Willow-fly (Perlidæ).*



FLIES FOR MARCH.

Wings. — The feathers of the starling, or a rich olive feather of a pheasant is preferable.

Wings flat and long.

Body. — Dark hare's fur, with claret mohair.

Legs. — Claret-coloured hackle. Horns of the same colour. Hook, No. 6 or 7.

3774. *The early dark-bodied willow-fly* is the willow-fly of *Salmonia*, and the second spring black of Cotton. Like the other early red fly it is seen hovering about the willows, withies, and alders. It is also like that *neuropterous*, appearing on the water if the season be open early in this month, and very soon after the red-fly. Another variety shows itself in the next month, nearly of the same size, but of a lighter and more dirty yellow, No. 25. It is the fly intended by *Salmonia* as the yellow willow phryganea, and is by some mistaken for the Yellow Sally; but this is certainly a distinct insect. The early dark-bodied willow-fly is best taken in bright days, but it seldom proves a very tempting bait; we have, however, occasionally had an hour or two of sport with it in an uncertain day, when the sun has shone brightly at intervals, and has as suddenly been obscured by clouds.

No. 9. *The Black Palmer-hackle* (*Arctia caja*, &c.).

Body. — A fibre from a black ostrich feather, ribbed with gold tinsel.

Hackle. — Black, wrapped over the whole body with black silk for fastenings. Hook, No. 4, 5, 6, or 7.

No. 10. *The Brown Palmer-hackle*.

Body. — Brown fur, or mohair of a deep amber, or otherwise a rich brown fibre of ostrich feather, ribbed alternately with gold and silver tinsel.

Hackle. — Of the red cock, worked with orange coloured silk. Hook, No. 4, 5, 6, or 7.

No. 11. *The Red Palmer-hackle*.

Body. — Dark red coloured mohair, with a little rich tinted red fur intermixed. The ribbing of either gold or silver tinsel; occasionally of bright yellow and green silk twist together.

Hackle. — Of a blood red cock, worked with red silk. It makes a good variation to use bright yellow silk on some occasions. Hook, No. 4, 5, 6, 7.

No. 12. *The Golden Palmer-hackle*.

Body. — Green and gold colour peacock harl ribbed with gold twist.

Hackle. — Of a bright red cock, worked with a rich green silk. Hook, No. 4, 5, 6, 7.

No. 13. *The Peacock Palmer-hackle*.

Body. — A rich full fibre of peacock harl, ribbed wide with silver tinsel, in preference to wire or twist. Form a head of this palmer with a bit of scarlet mohair.

Hackle. — A dark grizzle hackle worked with red silk. Hook, No. 5 or 6.

No. 14. *The Golden Peacock Palmer-hackle*.

Body. — The same as the last, except that it should be ribbed with gold tinsel, and worked with green silk, instead of silver platting and red silk.

Hackle. — A dark blood red. Hook, No. 4, 5, or 6.

3775. *As palmer-hackles* are meant to represent the larvæ or caterpillars of moths, as well as some of the insects themselves, it is very evident that their sizes and colours may be varied indefinitely. If our experience did not inform us that they are very effective in taking fish, we should be naturally led to expect it: for as every tree, bush, and plant, which overhangs the water is food for one or more species of larva, which must be constantly liable to fall into it; and as from their natural plumpness of figure they must form a delicious morsel, we need not wonder that the fish are always ready to receive them, unless something more tempting (as when particularly favourite flies are on the water) is at hand to attract their attention. As these larvæ are continually appearing in endless succession, so palmers are used to advantage from March until the the latest period of fly-fishing, or at least until October. In May, June, July, and August, they are however in the greatest request. When the innumerable variations in the size, form, and colours of the larvæ of insects is considered, it is evident that the directions in our angling books to confine the number of palmers to three, four, or five, is limited in the extreme; but it is still more erroneous to confine their size to a No. 6. hook. On the contrary, there is such an endless number of them, each different from the other, that the dresser may vary them in any way he pleases with effect; keeping these general principles in view, that when the water is fine and low, they should be dressed small, and sober in their tone of colour; but when used on waters which are disturbed and the day is dark, such as are larger and more conspicuously coloured are required.

3776. *The palmer-hackles*, Nos. 24, 25, 26, and 27., are those in general use among anglers; and with some they are great favourites, almost to the exclusion of other flies. No angler, certainly, should be without them; but we must remark, that on swift trout streams, particularly such as are wide, shallow, and exposed, they are not very effective. In rivers more sheltered by trees and bushes, and whose deep pools are formed by eddies, they are found to kill very heavy trout, but more certainly in the morning and evening. The red and black are excellent grayling killers also.

3777. *The peacock palmer-hackles*, Nos. 13 and 14, are of our own dressing, nor have we ever met with them in any other collection. For chub they are very valuable varieties. On the Wye and the Severn they have also killed trout in abundance; and we can safely recommend them to the notice of anglers. Some other varieties of the palmer-hackle there are. Those of Ronalds on *double hooks* are excellent.

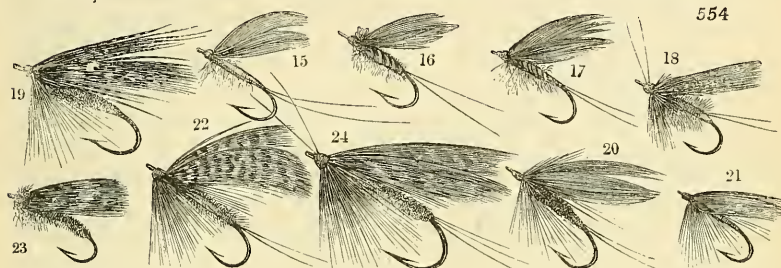
SUBSECT. 2. *Artificial Flies for April.*

3778. *The flies*, Nos. 1. to 7. inclusive, of the last month will be taken during this also. The palmers, Nos. 9. to 14. inclusive will be still more in request this month than in the last.

No. 15. Red dun or golden dun.
16. Orange bodied dun.
17. Ashy dun.
18. Grannam or green tail.

No. 19. Large spider or crane-fly.
20. Middling spider-fly.
21. Little spider-fly.

No. 22. Great whirling dun.
23. Oak-fly.
24. Stone-fly.



FLIES FOR APRIL.

No. 15. *The Red Dun or Spinner (Ephemeriðæ).*

Wings. — Starling or hen blackbird. To stand upright.

Body. — Dark fur of a hare's ear mixed with a little yellow from the same part. It must be dressed fine, as the body is small.

Legs. — Or dress the body with a small piece of a reddish brown coloured camlet, and pick it out rather rough on the under side to represent legs.

Tail whisks. — Two taper hairs. Hook, No. 7.

3779. *The red dun*, called by Taylor *the hare's ear and yellow*, is sometimes greedily taken by both trout and grayling. It was a great hobby with him, and, like most hobbies, was over ridden: it is however a good spring dun, lasting through the month, and appearing again in September. The *pseudimago* is the hare's ear and yellow.

No. 16. *Whirling Blue Dun (Ephemeriðæ).*

Wings. — Of starling's feather. To stand erect.

Body. — Hare's mixed fur, with a little orange coloured mohair wrapped with orange silk, and forked.

Legs. — Picked out of the dubbing at the shoulder. Hook, No. 7 or 8.

3780. *The whirling blue dun* is seen about the middle of this month, and lasts until the middle of the next, when it is succeeded by other races, which should be dressed of a more brilliant yellow. It is a good midday fly, and visits us again in September.

No. 17. *The Ashy Dun (Ephemeriðæ).*

Wings. — Of the hen blackbird or bunting wing feather. To stand upright.

Body. — The fur of a water rat or light part of a mole's skin, with a little orange coloured mohair: add a fork, and pick legs out of the dubbing. Hook, No. 9 or 10.

3781. *The ashy dun*, the ash fox of Taylor, bears a strong resemblance to some light varieties of the blue dun. It is a good fly for this month, and will kill through the whole of a gloomy day. These duns are all of them taken by grayling as well as trout, and on their second appearance in September and October they commit great havoc among them.

No. 18. *The Grannam (Phryganeidæ).*

Wings. — Hen pheasant's wing.

Body. — Dark fur of a hare's ear finished with a small wrapping of bright green floss silk.

Legs. — Grizzle hackle. Horns, the length of the body. Hook, No. 7.

3782. *The grannam*, which is also called the green tail, from its ovarial enlargement at the hinder parts, is one of the flies produced from a caddis, with moth-like wings, which lie flat on the back. While it lasts it is a killing fly; and as it always obtains a considerable notice

in our angling books, we shall add the mode of dressing it adopted by others. Taylor's method is thus given : — "The wings are from a feather out of a pheasant's wing, which has a fine shade that exhibits the very resemblance of those of the real fly : the body, the black part of hare's fur, a brown strip of a feather from a peacock's tail, and a very small bit of a green one with a grizzle cock's hackle ; whip in the ends of the peacock's feathers both together at bottom, lapping the green one only once round below the silk ; then, sloping it a little upwards, fasten it and cut away what remains, leaving it to be about as large as the head of a largish pin ; twist the fur on your silk, lap it a little thinnish up to the feather for the wings, and there fasten in the point of the hackle ; then, with the brown peacock that was fastened below, rib it all the way up, and fasten that ; now let the hackle be lapped twice round, fastened, and what remains cut away ; then finish the wings (taking care that no other part be tied in with them), and fasten off."

3783. *Bainbridge makes the wings of the grannam* from "the shaded feather of a partridge or hen pheasant ; the body, of the dark fur from a hare's ear, mixed with a little blue fur ; and for the tail, the green harl from the eye of a peacock's tail is the most showy material, although a small quantity of *bright green wax* (about the size of a pin's head), attached to the hook, is the best representation of nature ; a yellow grizzle hackle should be used for the legs, or it may be dressed as a hackle, with the shaded feather from under a woodcock's wing over the same body."

3784. *Bowler's account of the grannam* is a very excellent one, and describes "the first appearance of the fly to be about the beginning of April (if the weather is warm), it being a very tender fly, and unable to endure the cold. When they first appear on the water, they are seen in great quantities : on bright mornings you may begin to fish with them from six o'clock till eleven ; then you will find the browns come on, which you must use, as the fish will not touch the grannams as long as the brown continue : about five o'clock in the evening you may use the grannams again with success, the browns having then totally disappeared for that day. The grannam-fly is a four winged fly ; as it swims down the water, its wings lie flat on its back ; it has a small bunch of eggs, of a green colour, which gives it the name of the green tail fly ; as soon as it lights on the water, it drops its eggs ; it is of short duration, not lasting above a week, after which it totally disappears for that year. The wings are made from a feather out of the wing of a partridge or pheasant, which is shaded like the wing of a fly ; the body is made of the fur from a hare's face or ear, and a grizzled hackle of a cock wrapt under the butt of the wings. The hook, No. 8." Sir Humphry Davy notes this as a good grayling fly. As regards our own opinion, we never considered it such ; but as we have little doubt that he wrote from experience, we recommend it for trial, and it may very probably take with them better in some waters than in others.

No. 19. *The large Spider-fly or Crane-fly (T. rivosa).*

Wings. — The mottled feather of a partridge. To be dressed thin, as well as rather long and extended.

Body. — Brown fur, with any dun mixture, dressed long, and not too full, according to the figure.

Legs. — A thin but long fibred hackle. Hook, No. 4.

No. 20. *The middling Spider-fly (T. hortorum).*

Wings. — Starling or hen blackbird's wing feathers. To be dressed rather long and extended.

Body. — Rather darker than the former ; in figure the same.

Legs. — The same as the last. Hook, No. 5 or 6.

No. 21. *The small Spider or Gravel-fly (T. aquatic).*

Wings. — Snipe, woodcock, grouse, or hen blackbird's transparent feather. To be nearly close and flat.

Body. — Lead coloured silk, only without dubbing ; rather long.

Legs. — A minute portion of a long fine fibred brown feather. Hook, No. 8, 9, or 10.

3785. *The natural history of the genus Tipula* will correct many erroneous suppositions relative to these flies ; and the figure and descriptions there given of the varieties will further instruct the angler how to imitate them.

3786. *Of the Tipula, or crane-flies*, the two first kinds are met with in our meadows and gardens, the first being very common to the former ; and the second is so common around us, that at the very moment when some angler is reading this account, after the fatigues of a fishing day, he probably may meet with an exemplification of its intruding familiarity by its entering his apartment and putting out his candle. It is this variety which Bainbridge figures as the Harry-long-legs, with *upright* wings and *four* legs. The wings of the *Tipula*, popularly known as the Harry-long-legs, are *horizontally* expanded, in which way, of course, they ought to be dressed to attract the fish by their natural appearance ; and that they have

all *six legs*, instead of four. Their origin is not aquatic, but they are bred from larvæ or grubs which have been deposited, some under grass roots, and some within decayed willows and other trees; they are hence strictly terrestrial animals. It is therefore to be expected that when they are found on the water it must be by the force of the wind, and consequently that, like the coddling, they are best taken by both trout and grayling in windy and blustering weather, as is actually the case. At such times our experience coincides with that of Bainbridge, who says that their merits have been underrated by many anglers, and that on the contrary they will be found good killers on cloudy days. The largest tipulæ or crane-flies may be met with early in the spring; they increase in plenty during the summer, and only leave us with the winter's cold. This fly is to be regarded therefore as a general occupant of the annual catalogue.

3787. *There is another variety (Tipula crocata)* noticed in the entomology of angling, less common than the former, but much more lively in its colours, having a brilliant black body barred with bright yellow. Its wings are extended like the others, and the general size is the same with No. 20., but the circumference of the body is considerably larger. A clever representative of this would make a very showy and tempting artificial fly for water clearing after a flood.

3788. *The small spider or gravel-flies* (as they are called by some, from their being supposed to spring out of the gravel, as they are named by others spider-flies, from the fancied resemblance of the insect to a spider), unlike the larger varieties, have close incumbent wings, and the artificial fly must be consequently so dressed. Taylor's account of the spider fly runs thus:—"It is made after this manner: when you have got about a quarter of the way down in whipping on the hook, put in the points of the woodcock's feather (having it properly prepared as before directed), and fasten it with the silk, going on till you come nearly opposite the point of the hook; there, with your silk (which must be of a lead colour, and not waxed), begin to form the body, leaving it pretty thick at the tail, and allowing it to go thinner upwards, like the ant: when you come near to where the feather is fastened, put in the point of the black hackle, and lapping up your silk a little to be out of the way, take the black hackle, and lap it two or three times round close to where the other feather is tied in; if any more fibres remain, strip them off, and fasten with two laps, and passing the first feather put in, lap your silk very thin up to nearly the top of the shank, and wax it; then taking the woodcock's feather, work it round pretty thick up to where you fasten off, and so finish. This fly is in season from about a week in April till a week or ten days in May, and is best as a dropper. They appear most in bright and warm days, when you may see them come out of beds of sand by the water; but they disappear when the days become cold and stormy."

3789. *Bainbridge says, "The gravel or spider-fly is first seen about the middle of April,* at which time the gravel, in which these animals are bred, is literally covered by incalculable numbers of them. They are extremely delicate, and not often visible on cold days; at which times, however, success is more probable with this fly than when they are to be found in such great numbers. They may be used from morning until evening; and the trout are so passionately fond of them, that they gorge themselves with their favourite food, and retire to their secret haunts, thereby disappointing the most skilful endeavours of the angler. It is probably owing to the short duration of these flies, that the fish are so greedy in devouring them, as they are seldom to be found at the expiration of about three weeks from their first appearance. The wings are made of the feather from the wing of the cuckoo's mate, the goat-sucker, or, in the absence of the preceding two, from the woodcock; the body, of lead coloured silk for the lower and middle parts, and a strip of black ostrich harl for the thick part near the shoulders, round which a small dark grizzled hackle should be twisted twice, and the fly is completed."

3790. *These minute tipulæ* are strictly aquatic, being bred from larvæ which inhabit our rivers and lakes. These are of various colours and sizes, some of which may be dressed on a No. 7. hook; others are of about the bigness of gnats; and it may be remarked, that many of those flies described as gnats by anglers are small varieties of the tipulæ. When the young tipulæ have escaped from the pupa or grub state, their wings are not fully expanded, and they hide themselves under the stones, or bask in the gravel, until warmth and light have developed all their powers. It is in this helpless state that they have been considered as wingless insects by Taylor, and have been supposed to be engendered in the gravel or sand. The aquatic tipulæ are met with in the greatest numbers from the middle of April to the first week or to the middle of May, because this is the time of the great larvæ change of one of the principal varieties. Others succeed to them through the subsequent months, but comparatively in small numbers only; hence the accounts of their appearance in our angling books have been confined to a fortnight of April.

No. 22. *Great Whirling Dun (Neuroptera).*

Wings. — Feather of a cock starling's wing, or the pale grey from a mallard's wing. To be dressed erect.

Body.—Blue, squirrel and yellow martin's fur mixed, or otherwise dark mole and bright yellow mohair, or mix with two-thirds light hare's fur, one-third of claret coloured mohair.

Legs.—Blue dun hackle; tail forked with two dun hairs. Hook, No. 6 or 7.

3791. *The great whirling dun* is a valuable fly. In Best's respectable compilation, we find the following directions for dressing it:—"Dubbed with the fur from the bottom of a squirrel's tail, and the wings of the grey feather of a drake, or dubbed with squirrel's fur, mixed with about a sixth part of fine hog's down; the wings of a pale orange colour, taken from the quill feather off a ruddy hen; the head to be fastened with ash coloured silk, and a red unbarred cock's hackle may be wrapped under the wings, and a turn or two lower towards his tail."

3792. *This fly appears early in the month*, and continues through the whole of it in tolerable plenty; it is also seen, but less abundantly, through May and June. In very warm days it is taken principally in the morning and evening. In cold days it will raise trout all day long, but more particularly in a brisk blustering wind, when it proves usually very killing. In our own practice, we found it in all the waters of the midland counties a most excellent fly, but less so in the northern districts; it must, however, be remarked, that we were always furnished with two or three varieties. In very cold windy days, we found a large-sized imitation, in colour almost a pure dun, to be very killing. It may be observed, that the body of the natural fly varies much, but the wings are always the same.

No. 23. *Oak-fly (Leptis scolopacea, &c.).*

Wings.—Partridge's mottled wing feather dressed of a full size. To lie flat.

Body.—Yellow mohair, ribbed regularly with dark brown silk, and to be tipped with pale gold twist; make a large head of the brown fur of the hare.

Legs.—A honey-dun hackle wound twice under the wings. Hook, No. 9 or 10.

3793. *The oak-fly* has several synonymes, as ash, woodcock, downhill, and cannon-fly. It is also very often confounded with the hawthorn-fly, but having names enough of its own need not claim this. Walton says, and with truth, that the hawthorn is altogether a different fly. Bainbridge has likewise figured the hawthorn as a distinct species; and without doubt (although it is not so considered) the oak-fly is the same with the Downlooker. On all the waters we have tried it, it has raised many trout, and taken still more. "The oak-fly" (Cotton says) "is by some called the ash-fly, by others (but erroneously) the hawthorn-fly." The head, which is large, is of an ash colour; the upper part of the body should be greyish, with two or three hairs of bright brown mixed, and a very little light blue, and sometimes a hair or two of light green; the tail part is greyish, mixed with orange; wing of a mottled brown feather of a woodcock, partridge, or brown hen. Hook, No. 8 or 9.

3794. *This is the fly* which is seen much in March, April, May, and June, on the body of ash trees, oaks, willows, and thorns, growing near the water, standing with its head downwards; it is an excellent fly, but difficult to imitate, being of many colours, unequally mixed. It takes morning and mid-day, and does not seem to come from any caddis, for it never drops in great numbers on the water; the wings are short, and lie flat on the back, like the bluebottle, or large flesh-fly. Bowlker says that two living oak-flies put on a hook form an excellent bait to dape with for trout. Bainbridge also gives this fly an excellent character; but as his account agrees with the above, we forbear farther quotation from him than that he dresses the head from the fur of the hare's ear; body, under the wings, dun fur, in the middle orange and yellow, and towards the tail a brownish dun; the wings from the feather of a yellowish brown hen, or it may be made with a bittern's hackle only, without wings. It is said to be excellent both for dishing in the natural state, and using artificially." We are open to conviction, and the fly is open for the angler's trial; we recommend him to try it; we have killed well with it both trout and chub.

No. 24. *The Stone-fly (Perla bicaudata, &c.).*

Wings.—A mottled feather of the hen pheasant, or the dark grey feather of a mallard, rather inclining to red. To be dressed large, long, and flat.

Body.—Yellow brown mohair, mixed with light hare's ear fur, and ribbed with yellow silk, so distributed that the under and hinder parts of the body may exhibit most yellow to the fish. The body must be long and full.

Antennæ.—In the finishing, add two dark hairs from the beard or whiskers of a cat or dog, or from any other skin, setting them out wide.

Legs.—Two laps of a grizzled cock's hackle. Hook, No. 4.

3795. *The Stone-fly*, called also the cad or caddis-fly, Bainbridge says, may be dressed by means of a long fibred grizzled hackle from a cock's back, without wings; and this, he states, is a very general mode of making it, which we were not aware of, and confess we should not expect much success with it so dressed. On the contrary, we think this is one of those flies that cannot be well represented by any thing but a regular wing and body, as

will be evident by a reference to its natural history, and by an observation of its figure in the *Flyfisher's Entomology*, p. 76.

3796. *The angling history of this neuropterous insect* shows that it usually makes its appearance about the middle of April, although sometimes it is to be met with much earlier. It continues throughout the whole of June, and now and then later, and may be considered as a good morning and evening fly, and will be also taken during the whole of a warm gloomy day, particularly if there be wind. It is, however, much more killing when dipped with as a natural fly. Cotton's account of it is interesting and instructive:—"This same stone-fly has not the patience to continue in his crust or husk till his wings be full grown; but so soon as ever they begin to put out, that he feels himself strong—at which time we call him a *jack*—squeezes himself out of prison, and crawls to the top of some stone, where, if he can find a chink that will receive him, or can creep betwixt two stones, the one lying hollow upon the other—which, by the way, we also lay so purposely to find them—he there lurks till his wings be full grown, and there is your only place to find him, and from thence doubtless he derives his name; though, for want of such convenience, he will make shift with the hollow of a bank, or any other place where the wind cannot come to fetch him off. His body is long, and pretty thick, and as broad at the tail almost as in the middle; his colour is a very fine brown, ribbed with yellow, and much yellower on the belly than the back; he has two or three whisks also at the tag of his tail, and two little horns upon his head; his wings, when full grown, are double, and flat down his back, of the same colour but rather darker than his body, and longer than it, though he makes but little use of them, for you shall rarely see him flying, though often swimming and paddling with several feet he has under his belly, upon the water, without stirring a wing." (*Walton and Cotton*, Major's ed. 1823, p. 352.)

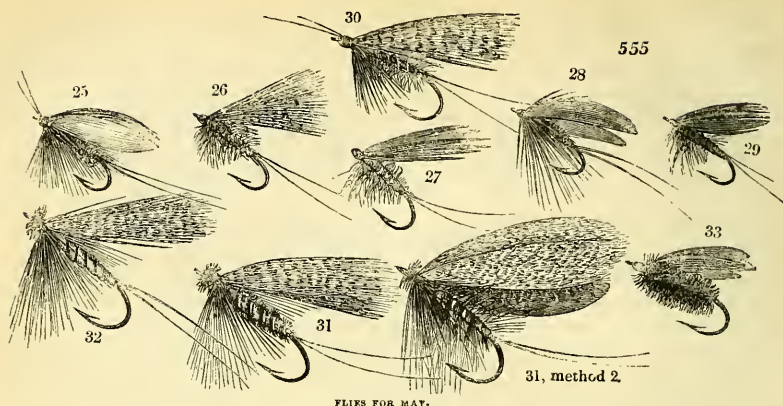
3797. *On the stone-fly the North Country Angler*, after giving some good remarks on its qualities in natural fly-fishing, finishes by the following sketch of its history, which is so much at variance not only with the experience of all anglers, but also with his own account, that we cannot but wonder at the discrepancy. He says, "It makes its appearance about the middle of May, and continues till the middle of June. It is called in some places the stone-fly and the trout-fly, and everywhere the May-fly. It is bred much in the same manner as the cod-bait fly, only the whirling dun fixes her eggs to the stone, and the May-fly lays hers among the sand under a stone: the first is bred in little becks or burns, the other in rivers. The eruca of the first is a cod-bait; the eruca of the other is the creeper, or water cricket, of which I shall here give my reader a full account." Here he evidently admits it as "bred in rivers," whereas, after having treated of it in its pupa or half winged state, he proceeds:—"As this bait lasts so short a time, you may use it in the heat of the day in shade or bush fishing, though the May-fly will do better at that time, and also at the top of the water of any strong stream, especially where it runs close to bushes that hang over the water. The May-fly lives but a little while after she is full winged, and leaves the water not three weeks just to engender, which they do in such a manner that the wind will carry the couple a great way, whilst they fly, as it were, the contrary way to each other, till both fall together on some pool, where they make a delicious morsel for the first fish that sees them. If they escape being taken, she lays her eggs, seventy or eighty, under or by the side of a stone, where the sand and gravel will soon cover them; here they grow till the spring, creeping and feeding among the gravel and under stones, till they change their larva, and become flies." It was most unfortunate for the reputation of that part of Mr. Daniel's great work on sporting which treated on fishing, that the writings of this singular author formed his principal oracle. In the *original* the numerous errors excite a smile; but where copied as authority into such a work as that of Mr. Daniel, we feel regret that the keen sportsman should not also be more of the naturalist.

SUBSECT. 3. Artificial Flies for May.

3798. *The palmers* may be used throughout the month: Nos. 16, 17, 24. to the middle of it; No. 1. 4. 7. 8. 19, 20, 21, 22, 23. may be used throughout. No. 16. should after the first week be dressed of a more bright yellow, which will carry it through the whole of this and part of the next month: it also appears again in September.

No. 25. Later willow-fly.	No. 32. Grey drake, or May-fly.	No. 38. Case winged orange-fly.
26. Bright yellow dun.	33. Shorn-fly.	39. White moth.
27. Cream coloured dun.	34. Black caterpillar-fly.	40. Cream coloured moth.
28. Little whirling dun.	35. Sand-fly.	41. Brown moth.
29. Iron blue dun.	36. Bluebottle-fly.	42. Evening white winged harl-fly.
30. Dun cut.	37. Wasp-fly.	
31. Green drake, or May-fly.		

May must be considered a very busy month with the angler, little less so with the fish, and very important to the favourite flies which are entombed in myriads within the stomachs of the fly-taking tribes. It is, however, the fly-fisher's *Gala*: nature smiles on him; the beauteous winged insects hover over him; and Heaven's choristers pour forth their melody to cheer him and congratulate him.

No. 25. *Later Willow-fly (Phryganea).*

Wings. — Of the dirty white cock's hackle. To lie flat.

Body. — Camel's hair and yellow fur mixed, or cloudy yellow mohair.

Legs. — A few fibres of a grizzled hackle, two of which may be so managed as to form the horns; otherwise, add two grey hairs for the purpose. Dress with a bright yellow silk. Hook, No. 8 or 9.

3799. *The later willow-fly* is apt to be confounded with the little yellow May-dun, because both come on a short time before the green drake. These discrepancies arise from want of a due observance of the essential characteristics between the *Ephemera* or day-flies, in angling language known as duns, green and grey drakes, May-flies, red spinners, &c.; and the other important class of aquatic flies, known as caddis flies, or *Phryganeida*. This later willow-fly is of the class *Phryganea*, but the L. May-dun, with which it is apt to be confounded, is an *Ephemer* of a very bright yellow colour, with erect wings; whereas the later willow has, in common with its congeners, four moth-like wings, which lie flat on the back. Its appearance is confined to about a fortnight or three weeks of this month, during which time in the middle of the day it is well taken by both trout and grayling.

No. 26. *Bright Yellow Dun (Ephemerida).*

Wings. — The yellow feather under the thrush's wing. To stand erect.

Body. — Bright yellow wool or mohair. To be forked with two hairs.

Legs. — A small yellow dun hackle. Hook, No. 10.

3800. *The bright yellow dun*, known by some anglers as the silk-fly, and by others as the little yellow May-dun, is certainly a minute representation of the green drake, to which it acts the part of an avant courier, by regularly appearing a few days previous to it. This beautiful insect may be dressed as a hackle-fly, with a dyed yellow hackle. It is a midday bait, but as far as our experience goes is not very tempting, and when the May-fly appears is no longer noticed, and itself soon disappears.

No. 27. *Cream-coloured Dun (Ephemerida).*

Wings. — Light part of the landrail's feather. To stand erect.

Body. — Cream coloured mohair, wrapped with orange coloured silk. Forked with two yellow hairs.

Legs. — Picked out from the dubbing. Hook, No. 8 or 9.

3801. *The cream coloured dun* appears about the middle of this month, lasts until the middle of July, and is taken by trout all day in warm weather, particularly when the day is overcast without tempest. We were once very successful with this fly on the Lugg, in fishing for the grayling of that river.

No. 28. *Little Whirling Dun (Ephemerida).*

Wings. — Starling's wing feather.

Body. — Ash coloured fur, enlivened with a little light brown mohair, the whole worked with a light orange silk.

Legs. — A minute portion of landrail feather, with two strands or fibres of the same for forking. Hook, No. 9.

3802. *The little whirling dun*, like the larger, takes its name from the whirling manner of its flight: it appears on the water about the middle of the month, and remains with us through June, and sometimes until the first fortnight of July. In moderately warm weather it may be used all day long, and in sultry seasons, when accompanied with wind, it is

very successful about mid-day. In colder weather, singular as the fact may seem, it is taken best in the mornings and evenings; but as to its general character it is most killing in all cases when a breeze is stirring. It appears again about the middle of August, when grayling will take it as well as trout.

No. 29. *Little Iron-blue* (*Ephemeridæ*).

Wings. — From a tomtit's tail, or cormorant, or merlin hawk's wing.

Body. — Pale blue fur wrapt with purple silk, and forked.

Legs. — Picked from out of the fur. Hook, No. 12.

3803. *The little iron-blue* is, with the exception of the gnat, the smallest fly that is imitated by the angler; yet its apparent insignificance is no bar to the admiration of the fish; and as the angler must study their taste and not his own, so he would do well on a cold windy day, when the trout, like ourselves, are apt to be fastidious, to furnish himself with these little gentry, which he may use with great advantage from ten or eleven o'clock in the forenoon until three or four in the afternoon from the first week in this month until the middle of the next: and where grayling are to be found, it will prove an excellent lure for them also.

No. 30. *The Dun-cut* (*Phryganeidæ*).

Wings. — Yellowish green feather of a landrail, to be dressed rather longer than the body To lie flat.

Body. — Bear's hair with brown and yellow crewel or mohair mixed. After this is applied in the usual manner, rib the body with bright orange silk.

Legs. — Picked out from the fur, or added by a very minute ginger hackle, two fibres of which may be carried forwards to represent the horns or antennæ. Hook, No. 8, 9, or 10., for it will bear all these varieties to suit it to the occasional alterations in the state of the water.

3804. *The dun-cut* proves in many cases a very killing caddis-fly. It regularly appears in this month, but at an uncertain period of it, and seldom lasts longer than the middle of June. It will take fish on gloomy days the whole day through, but best of all in warm sultry evenings, when its execution is often very great, particularly with trout, being, according to our observations, less greedily sought by grayling.

No. 31. *The Green Drake or May-fly* (*Ephemera vulgata*), dressed after two Methods.

FIRST METHOD.

Wings. — The mottled feather of the mallard dyed a pale yellow green. To stand erect, and to be slightly divided.

Body. — Bright yellow mohair, ribbed with light bronze peacock's harl.

Legs. — A red ginger hackle, forked with two hairs. Hook, No. 5 or 6.

3805. *The green drake*, to be well dressed after the following method, requires skill; but if our judgment has not greatly deceived us, it deserves a place in every angler's collection, though we never saw it in any other than our own, or in such as had been made from specimens obtained from us. Our method was as follows:—Having first dubbed the shank of a gut-armed hook, from below to the setting on of the wings, with bright yellow mohair spun over orange coloured silk, carried round the shank in rather open turns so as to represent ribs, we secured the silk by a half hitch. At this time the wings were attached in the usual manner, and under the last lappings made to secure them was laid in a long and fine peacock's harl, which being made fast, was then, both silk and harl, lightly twisted together, and both were carried upwards to form the head, when returning to the setting on of the wings, both harl and silk were passed between them to assist in the proper division of the wings. This done, we found it better to make a momentary separation of the silk from the harl, in order to wind two firm turns of the bare silk around the butt of the hackle now laid in for the legs, which having firmly fastened off, a slight twisting of the silk and harl were again made, and for two or three turns more were carried over or rather between the ribbings of the yellow dubbing below the wings, where, making another momentary separation of the silk and dubbing, and having secured the work by a half hitch, the hackle was passed two or three turns very close under the butt of the wings, and fastened off. This done, the remainder of the hackle was trimmed away, and the silk and the harl being lightly twisted together, were again continued to form alternate dark and light ribs, by interposing each lap between those laps previously made with the yellow dubbing, which being well done, the variegated abdominal rings of the fly show remarkably well, and being held together by the silk, they invariably remained permanent. Thus, having carried the body within nearly a turn or two of the requisite length, again disunite the silk and harl, and under the same wraps which secured the harl introduce two sable or fitchett hairs for forkings, so lapped as to point rather upwards. The finishing off wraps will form the last abdominal ring of the fly, and leave it complete. The usual dressing of this fly is with three whisks, but we prefer two, from observing that when three

were used, unless they were too coarse to be natural, they were apt to unite and form a ripple as well as an unsightly appearance.

SECOND METHOD.

Wings.—The ends of two dyed mallard feathers placed very erect, one for each wing, the points being directed towards each other, but as a whole forming an arch over the body.

Body.—A thin dubbing of very light green mohair ribbed with fine gold twist, forked as the first.

Legs.—A full red hackle dressed over the whole, somewhat after the manner of a palmer. Hook, No. 5.

3806. *This variety in the manufacture of the May-fly*, at least so much of it as regards the wings, is said to have originated among the Hampshire dressers. A fly *tied* after this fashion is however now common in the London shops, but is there usually, as far as we have observed, made more in the nature of a hackle-fly, having neither dubbing nor whisks. Occasionally we have seen it forked, but seldom dubbed. We have however to observe, that in this form these flies are sometimes taken freely, but we think by no means equally so as when dressed according to our method. The figure, we hope, will represent that it is not a stripping of fibre which forms the wing of the fly in this variety, but the fibrous end of an individual feather is employed for each wing, stem and all; and for rapid streams or eddies it certainly proves very killing, and it was principally invented for their use, but is less adapted to moderate waters. The wings being supported by the stem of the feather, and being also arched, present such a resistance to currents that they do not get clubbed or drawn into a shapeless mass like those dressed in the ordinary manner, but show themselves like the wings of the natural fly, which, it is to be observed, is not blown on the water by accident as some flies are, neither does it rise and fall on the water like the grey drake, but alights on it with unruffled wings while it deposits its eggs. For the same reasons the stiff resistance made by the upright feather makes this variety scarce and ripples still water too much.

3807. *The use of the May-fly* is by no means so unlimited as is supposed. In some rivers it is not bred at all, and consequently, as being there unnatural, will not readily raise fish by its artificial representations. The Wandle is an instance of this, and several other English rivers to be noted hereafter. Neither is the May-fly often found on very large rivers, but is more usually bred in shaded brooks and rivulets, such as the Colne, the rivers and streams of Hampshire, Derbyshire, &c.

3808. *Wherever the Ephemera vulgata*, or May-fly of anglers, is bred, its attractive qualities to fish is surprising. Trout, by their avidity, would seem to seek it instinctively, not only as the most luxurious food, but as the most sanative also; for during the time it is on the water they lose their remaining emaciation, and thrive amazingly; their muscles become deeply tinged with red blood, and their vigour is so increased, that the young angler who plays a trout of a pound in this season is often led to suspect that he is encountering a fish of double the weight. We remember, in the Colne, to have heard the outcries of a young friend but recently initiated, who being at some distance from ourselves called out lustily for help, he having, as he said, "hooked so large a fish that he was afraid his tackle would give way." *Our united efforts* (!) landed this leviathan, whose weight was exactly three-quarters of a pound, very much to the chagrin of our friend. A similar disappointment occurred to a fly-fisher in the Thames, near Marlow. After having all the line run out, &c. he landed a trout of two pounds only, but *hooked foul*!

3809. *The time of the appearance of the yellow green May-fly* is very much regulated by season. It however seldom departs from its old custom of showing some of its tribes between the 18th and 22d of May; but the grand show is advanced or protracted by the advance or tardiness of summer heats. The appearance is almost simultaneous in all the midland counties. Cotton says, "the green drake comes in about the 20th of this month, or betwixt that and the latter end; for they are sometimes sooner and sometimes later, according to the quality of the year, but never well taken till towards the end of this month and the beginning of June." If we except the error of considering the May-fly as a phryganea or caddis-fly, instead of an ephemera or day-fly, we cannot fail to be pleased with his accurate description of its habits and manners in his continuation of this subject:—"The stone-fly comes much sooner, so early as the middle of April; but is never well taken till towards the middle of May, and continues to kill much longer than the green drake stays with us, so long as to the end almost of June, and indeed so long as there are any of them to be seen upon the water; and sometimes in an artificial fly, and late at night, or before sunrise in a morning, longer. Now both these flies, and I believe many others, though I think not all, are certainly and demonstratively bred in the very rivers where they are taken, our caddis or cod-bait, which lie under stones in the bottom of the water, most of them turning into those two flies, and being gathered in the husk, or crust, near the time of their maturity, are very easily known and distinguished, and are of all other the most remarkable, both for their size as being of all other the biggest—the shortest of them being a full inch long or more—and for the execution they do, the trout and grayling being much more greedy of them than of any others; and indeed the trout never feeds fat, nor comes into his perfect season, till these flies come in. Of these, the green drake never discloses from his husk till he be first there grown to full maturity, body, wings, and all; and then he creeps out of his cell, but with his wings so crimped and ruffled, by being pressed together in that narrow room, that they are, for some hours, totally useless to him; by which means he is compelled either to creep upon the flags, sedges, and blades of grass, if his first rising from the bottom of the water be near the banks of the river, till the air and sun stiffen and smooth them; or if his first appearance above water happen to be in the middle, he then lies upon the surface of the water like a ship at hull, for his feet are totally useless to him there, and he cannot creep upon the water as the stone-fly can, until his wings have

got stiffness to fly with, if by some trout or grayling he be not taken in the interim, which ten to one he is, and then his wings stand high, and closed exact upon his back, like the butterfly, and his motion in flying is the same. The body is in some of a paler, in others of a darker yellow, for they are not all exactly of a colour, ribbed with rows of green, long, slender, and growing sharp towards the tail, at the end of which he has three long small whisks of a very dark colour, almost black, and his tail turns up towards his back like a mallard; from whence, unquestionless, he has his name of the green drake."

3810. *Bainbridge's account of the May-fly* is also well worthy of notice:—"They appear about the 20th of May, and continue for nearly a month. The wings stand erect upon the back, and vary, in the tints of yellow, in different flies. The body is long, slender, and taper towards the tail, from the end of which spring the forked whisks, which, turning upwards towards the back, give the name of green drake to this fly. The body is made of hog's down, or light bear's hair intermixed with yellow mohair, or of barber's yellow silk only, warped with pale floss silk, and a small strip of peacock's harl for the head. A bittern's hackle is acknowledged to be the best imitation of the legs and dark stripes of the body, and for the tail the long hairs of sable or fitchet are most appropriate." Bainbridge gives the two following methods of dressing the May-fly as handed to him by an ingenious friend:—"For the drake flies—"White, or pale straw coloured floss silk, ribbed with very fine silk, either black, brown, or copper coloured, and goldbeater's skin neatly worked over the whole, which, being transparent, gives the body a rich cream coloured appearance, such as is to be observed in the natural fly." The other—"White India Rubber, properly shaped, and introduced on to the shank, through a hole previously pierced in it, with a needle sufficiently large to admit the shank and gut, when whipped together, to pass through. This has a very natural appearance, if delicately coated with copal varnish. The wings and legs are put on afterwards."

No. 32. *The Grey Drake (Ephemera vulgata. Imago).*

Wings.—The grey feather of a mallard, or of a teal, if not too dark. To stand erect.

Head.—A morsel of peacock's harl.

Body.—Fine down, from a white pig; light grey camlet, or whitish grey; ostrich harl, striped with deep mooroon silk, and forked with two or three grey hairs.

Legs.—A grizzled hackle. Hook, No. 5 or 6.

Or,

Wings.—Grey mallard's feather.

Body.—Dressed long, with white ostrich and peacock's harls, in alternate ribs: make a head with the harl of the peacock and tip with fine silver wire, forked with sable.

Legs.—A grizzled cock's hackle, but not carried further than usual. Hook, No. 5 or 6.

3811. *The grey drake May-fly*, called by some anglers the grey caughtlan, is the *imago* of the green drake, but its colours are different, and its habits also vary. It is of a light dirty yellow, with dark stripings and darker wings than those of the green drake, but more glossy. It disports itself, not in the same manner as the green drake, by seating itself on the water, but by graceful alternate risings and sinkings over it, when a momentary pause expels an egg, which immediately falls to the bottom of the water. The grey drake *ephemera* has erroneously been supposed to be the female of the green, which, if there wanted other proof to the contrary, would be apparent from the different times at which they appear, the grey always coming on a few days after the green. It is likewise less limited in its localities, for it is found on the largest waters, and rather oftener there than on the smaller. It usually shows itself on the water at a later hour in the day than the green, being most prevalent from 3 p. m. until sunset. When an unfavourable day has prevented the green May-fly from appearing in sufficient numbers, the grey will commit vast havoc among the trout in the evening. From the difference in the manner of its alighting, or rather from its momentary rest only on the water, it must, if possible, be thrown directly over the fish at once: any drawing of it from above downwards must evidently be more unnatural than in the other case. Taylor gives the following practical remarks on both these stages of this insect:—

3812. *The males and females of these flies differ much*, the wings of the former are the grey spotted part of a mallard's feather, mixed with that of a widgeon; the body, light camel's hair, and a dark bittern's hackle; the fork has three fangs, and are the hairs from a fitch's tail; and the head a bit of a brown peacock's feather from the tail. The wings of the latter are the grey mallard only; the body, part of a fine oaten straw, and a cuckoo-cock's hackle. They are in season with the preceding fly (the yellow cadew), only not so forward by a few days. The yellows are on the water earlier in the day; but when the grey ones appear, the fish leave the former, and take the latter. During the continuance of these flies they are excellent, and may be termed the trout's delight. The female of the greys is deemed more killing than the male, which is accounted for by their frequenting the water in much greater numbers to deposit their ova; and probably these may render them more tasteful to the fish, particularly before they drop them. They are large flies, and are best made on a large No. 5. hook. In making the male, let the three hairs for the fork be near an inch and a half long, and made to stand open; after carrying up the camel's hair, beginning with it rougher at bottom, and leaving it smoother towards the wings, take a bittern's hackle, and rib it very thick, nearly to the tail, leaving the body clear towards the wings. The fork of the female is the same as that of the male; the straw must be whipped in at bottom, lapped neatly up to the wings, and ribbed with the cuckoo hackle, in the same way as that of the male fly. Finish both as directed in the foregoing ones. After these flies disappear, the trout for some time become very shy: most anglers are at a loss what flies to use after the greys; but the wren's tail and grouse hackle, two of the standards before mentioned, are flies which the fish will not refuse, even when the former ones are on the water in the height of their perfection."

No. 33. *Shorn-fly (Melolonthide).*

Upper wings.—Landrail's red feather. To be dressed short.

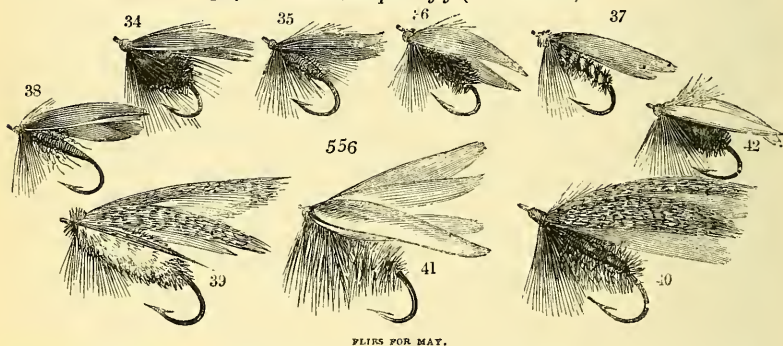
Under wings.—Starling's wing feather, or a dun hackle.

Body.—Peacock's harl. Hook, No. 6.

3813. *The shorn-fly* is one of the stumbling-blocks to the learner, who is continually breaking his shins over one obscurity or another in perusing the accounts of flies as we meet with them in our angling books, and in no class of flies is this more observed than

in the case-winged or beetle tribes; and this confusion ceases to surprise us, when we find that beetles or *Coleoptera* comprise more than a third of British insects: for among many thousand species, it is hardly probable that different anglers should have in view the same, when they come to select a type for imitation. Neither is it desirable they should: for different localities give different insects. When we add that the males often differ from the females, a still greater latitude must be allowed. The angling imitations, then, like the one at the head of this paragraph, must be considered as standing for several species, out of which one may sometimes be selected as common and widely dispersed: but Nature is a wide field, and has many more insects than science has names for, or has yet described. When therefore the angler's names differ, it is frequently from the abundance of species he has to select out of: and this especially in the *Coleoptera*. While one angler, with Bainbridge, imitates one of the *Coccinellidæ*, or lady-birds, of which Stephens enumerates 49 British species, another may take the *Melolonthidæ*, with Ronalds, and still have 12 species to choose from, out of which to fashion his Shorn-fly. And thus, much as imitations differ, the originals are still more inexhaustible in their variety; and the angler's ingenuity will still find abundant matter on which to employ itself. The imitation of various water-beetles has been humorously treated by Mr. Wheatley, in that excellent and original little work entitled *The Rod and Line*, published by the Messrs. Longman. He observes:—"If the fly-fisher will take the trouble to open the stomachs of trout, almost at every season, he will very often find part of their contents to consist of one or other of the beetle tribe: a lesson, I imagine, well worth the learning." And he complains with much reason that the only beetles in vogue with most anglers are the Peacock Fly and the Marlow Buzz. The description of his capture of an old wary trout with an imitation of the Frog-hopper must make every fly-fisher *jealous*. How just, too, is his remark, that many of the so-called fancy flies have their prototypes in nature. The term *fancy-fly* is often vulgarly applied to all flies whose original is unknown to the angler. Much do we desire to see more common amongst us the observant practice of what he well calls the *naturalist angler*.

No. 34. *Black Caterpillar-fly (Bibio Marci)*.



Wings. — From a feather of a jay's or starling's wing. To lie like those of the house-fly.

Body. — Ostrich harl, dressed full.

Legs. — Very dark hackle. Hook, No. 7.

3814. *The black caterpillar-fly* also comes to us under a very questionable name; there is about this time a very dark phryganea, known among anglers by various names: there are varieties of beetles, and musca also, very dark in colour, which are found on the water during this month of the size specified. There is likewise the true hawthorn-fly, which we suppose is the one meant by Bowlker. This fly we have successfully imitated in the above manner, and with it we have killed fish. We have also in our collection both winged flies and hackles thus dressed (purchased of regular fly-venders), which, in cloudy days, have been well taken. Grayling will likewise rise to a hackle-fly of this kind, dressed with one, or at most two, laps of fine silver twist. It is said to succeed best on small waters, which we rather agree with, for we have killed many trout with it in the Colne, and both trout and grayling in the Dove; but have been less successful when using it either in the Wye or Severn. It is a good fly for trout in pools.

No. 35. *The Sand-fly (Phryganea)*.

Wings. — The sandy coloured feather from the landrail's wing.

Body. — Sandy red fur of the hare's neck, with a very small quantity of orange coloured mohair, worked with the same coloured silk.

Legs. — A ginger hackle. Hook, No. 7.

3815. *The sand-fly* has been eulogised by Bainbridge, to whom we are indebted for our knowledge of it. He directs us, if it be dressed as a hackle, to use the feathers from under the throstle's wing which is nearest to the colour of the fly. We have, however, dressed it with a few fibres from a turkey's wing, which, though too coarse, yet afforded such an excellent colour, that we found a compensation in the change. We have also tried it with the red partridge feather; and we find that, provided all the feathers are of one hue, wings, body, and legs, the bird employed is not of consequence. The sheldrake (*Tadorna vulpanser*) yields a feather which we have used with much satisfaction for this purpose. We first met with the account of this fly in Bainbridge's excellent work, when fishing in the Colne at Iver; our success made us immediately adopt it, and we have continued to use it, with various modifications, ever since. This author says it is as alluring to grayling as to trout, and our fishings in the Dove bear testimony to this. We have taken grayling likewise with it in the Lug, near Hereford. It will kill throughout the angling months, but best, according to our experience, towards the middle hours of the day. Cotton has also a sand-fly, but it is evidently distinct from this: we should conjecture it to be a *Tipula* or *Phryganea*, which is found about shores among the sand and gravel.

No. 36. *The Bluebottle-fly* (*Sarcophaga striata*, &c.).

Wings of the snipe, starling, or any small bird of the colour, to represent two transparent wings. To lie flat, but slightly pointed outwards.

Body. — Stone blue floss silk, tipped with gold. Head, bronze peacock's harl.

Legs. — A very fine black hackle. Hook, No. 7 or 8.

3816. *The bluebottle-fly* is called an *April fly*, and we do not deny that it may be met with at that time, and even in March; but its numbers are comparatively few, unless the weather be very propitious to its appearance. In May it is more frequently seen, and will, in warm evenings, and during warm breezes on a cloudy day, kill trout and grayling. Dace and chub, but particularly the former, will take it greedily whenever offered, except in the middle of a very bright day.

No. 37. *The Wasp-fly* (*Allantus vespiformis*, &c.).

Wings. — Mottled mallard or light blue partridge hackle. To be dressed flat.

Body. — Orange coloured mohair, dubbed in very thin ribs, and alternated with black ostrich harl, very fine. Carry the orange dubbing upwards to form the head.

Legs. — A light brown red hackle: make two turns only. Hook, No. 7.

3817. *The wasp-fly* is an old selection of Walton and Cotton almost lost from our books, which, though not a certain killer, is frequently well received. It is one of the common fly tribe, and bears nothing of the wasp about it but the name. It is a good bait for a clearing water not over thick, in which we have been successful with it both with trout and grayling. In fly-fishing for chub, roach, and dace, it is a most excellent fly; but when we have purposely dressed it for chub, we have added gold twist to the ribbing: trout take it best without. It continues to be met with during all the summer months; and though it appears about the end of May, it is most frequent in June and July.

No. 38. *The Cuse-winged Orange-fly* (*Telephorus lividus*).

Upper wings. — Red partridge's tail feather.

Under wings. — Hen blackbird's feather, or any other dun transparent-looking feather.

Body. — Red brown mohair, &c. &c. dressed long.

Legs. — Two-turns of a small red hackle. Hook, No. 7.

3818. *The case winged orange-fly*, called by Bainbridge the red spinner, by others the fern fly, is made with a starling's feather and a red hackle for wings, and with seal's fur or hog's down, dyed red, and mixed with brown mohair for the body. We have stated as our opinion of many of the case-winged flies, that they are far from killing baits, to use the angler's language; but the red spinner is certainly an exception, particularly in hot summer weather. It appears in May, remains with us till the end of August, and is an all-day fly. It is of more consequence for angling in countries subjected to heavy floods than in waters less subjected to these changes; for in the former the disturbed volume of water sweeps away myriads of aquatic insects, and leaves the fish more ready to take those furnished from hedges, trees, and meadows. It is thus probably that this fly proves so excellent when the water is clearing after a flood, its bright hue showing well through the turbid stream.

SUBJECT. 4. *The Night-flies*.

3819. *Some anglers* are particularly partial to night fishing, and during the hot months evening fly-fishing is very pleasant, and very productive also; but to pursue it through the night is not to our taste, as it seems to savour too much of poaching, and can hardly be called fair play towards the fish. The natural history of the *Phalæna* will show that there are very many of both sphinges and moths that must fall in the way of all the fly-taking fish; and the soft mucilaginous mass they present probably makes them delicious

morsels for such fish. The usual angling lists furnish only three moths — the common large white moth or owlet, the common brown, and the cream coloured moth. To these is added in the practice of some anglers of Hertfordshire, Buckinghamshire, and Hampshire, a moth-like artificial representation, known in the former county as Harding's or the coachman's fly, from a stage-coach driver of that name who was an excellent fly-fisher, and introduced it there, probably from Hampshire, where it has been longer known.

No. 39. *The Mealy-white Moth (Liparis auriflua, &c.).*

Upper wings. — The dappled light feather of the mallard, or any very light clear coloured feather.

Under wings. — The soft mealy feather of a white owl, or, in default, any soft white feather.

Body. — White rabbit's fur, or white ostrich harl, dressed full, and exhibiting a brown head.

Legs. — A white cock's hackle, carried two or three turns only behind the wings. Hook, No. 3, 4, or 5.

No. 40. *The Mealy-brown Moth (Odonestis potatoria, &c.).*

Upper wings. — The dappled feather of a mallard, dyed a reddish brown.

Under wings. — The soft feather of a brown owl, or a soft reddish feather or two from the landrail.

Body. — Any soft brown fur, as of the hare, brown hog's down, bear's fur, and the nearest the shade is to tan the better. To be dressed moderately full and long.

Legs. — A brown cock's hackle carried one turn beyond that of the preceding fly. Hook, No. 3, 4, or 5.

No. 41. *The Mealy-cream Moth (Phragmatobia lubricipeda, &c.).*

Upper wings. — The cream coloured feather of the grey owl.

Under wings. — The soft feathers of the same, but a shade lighter.

Body. — Any dubbing or fur of a cream colour.

Legs. — A ginger hackle wrapt three turns. Hook, No. 4, 5, or 6.

3820. We are not very favourable to night angling, regarding it as neither very healthy, nor sportsmanlike; however, it is said that if a gentle be added to the white moth, and a caddis to the brown, it will increase the chances of success: we have never tried this plan, but we think it extremely likely to prove a valuable auxiliary. The moth practice may be thus sketched: — as soon as the sun is down, for half an hour the white winged harl-fly, or coachman, No. 42., may be tried; for the next hour the moths, Nos. 39, 40, or 41., dressed on hooks No. 5 or 6., or sometimes even No. 7., where the trout run very small and the water is fine. After that time *night fishing* commences, and the heaviest trout are then taken, when of course hooks, No. 3, 4, or 5., are more appropriate, and occasionally No. 2. is not too large. In dark nights use none but the mealy white.

3821. "*The mealy white.* The wings, the soft mealy feathers of a white owl; the body, the white fur of a rabbit, with a soft downy white hackle. In making it take the feathers (for there must be two both alike, broadish at the points, and large enough to form a pair of full wings), and lap them in, as done in the stripped feather for the wings of other flies, and at the bottom fasten in the point of the hackle; then twisting the fin on the silk, make the body as thick as a very large straw, until near the wings; there lap it thicker, and bringing up the hackle thinly, lap it twice or thrice round at top, and divide the wings so as to have the whole of each feather for the separate wings, and finish as in other flies that have their wings divided." The hook should be No. 4.

3822. "*The mealy cream.* There are feathers on a yellow owl of a deep cream colour, of these make the wings; the body, of soft fur of the same colour, and a very pale yellow hackle. It is made on the same sized hook, and finished and fished with the same way as the former."

3823. "*The mealy brown.* The wings are the soft brown feathers of an owl; the body (which should be long, and of equal thickness with the two preceding flies), the fine lightish brown fur of a hare or rabbit, with a light brown bittern's hackle, twice round under the wings; it is finished and fished with in the same way as the two first, which are, however, considered the best. They are most killing in gloomy nights, after sultry days; and when angling in this manner, the line ought to be but a little longer than the rod. The fish may be heard to rise at the fly as in the daytime, and be felt when they take it. Another method, successfully used by a gentleman, is, to make the fly in imitation of the large moth or owl flies, which come abroad in evenings; he dressed his to six hairs, with light mottled large wings, sometimes double; the body of the whitish stuffing of an old saddle, or such dubbing as may be got in a tanner's yard, and over all a large white or yellow cock's hackle; the body of the fly was at least as thick as a goose quill, and rather more than an inch long, with a great rough head; the line used was a yard longer than the rod. After throwing it out to its full extent, he drew it back at several pulls, about a yard at a time, which made it swim as if alive: when a fish was heard to break the water, and the line was felt to stop, he generally struck, though great fish hook themselves by closing their mouths and turning their heads. When the night was not very dark, he had a link with a fly of the same size as the former, but a little darker; and when it was so clear that he could discern his line, he used one half the bigness, having a mottled wing, brown body, and a black hackle with red points."

No. 42. *The Evening White-winged Harl-fly, or The Coachman.*

FIRST METHOD.

Wings. — Of a white fowl's feather.

Body. — Peacock's harl, dressed full and short.

Legs. — A few turns of a red hackle, clipped short above. Hook, No. 5, 6, 7, or 8.

SECOND METHOD.

Wings. — Of a white fowl's feather.

Body. — Peacock's harl, dressed rather less full and rather longer.

Legs. — A full sized brown hackle, dressed over the whole. Hook, No. 5, 6, or 7.

3824. *The evening white-winged harl-fly*, as before observed, is also known by the names Harding's, Watford Coachman, and the Hampshire fly. Unquestionably trout consider these artificial flies as representatives of some insect, which they are in the habit of taking, or this bait would not so very generally deceive them as it does; but we have failed to detect the original, nor are we aware that it has been discovered by any other angler. Throughout the summer months as an early evening fly, and until twilight, it proves most valuable in the midland counties and the bordering ones within eighty miles of the metropolis. On the Colne, and throughout its course, in the Hampshire, Dorsetshire, and Devonshire waters, where we have for many years been in the habit of using it, in our opinion there is no fly at all equal to it. We know it will kill in distant waters also, as the Severn, the Wye, the Usk, and Eden; but respecting these, as our experience on them has been usually that of a tourist, since fishing has been a favourite pursuit, we speak less decidedly. On the Tyne, where we continued to fish for a whole season, it was likewise a killing fly, but less so than in more southern waters. From this month till September we have found it no less successful as an evening fly; but we have not had reason to consider it equally so early in the morning, as might be expected from its moth-like character. As to the two different methods of dressing it, we believe that when the water is fine and low the first is the most killing, and that the smaller size is the best. In deeper waters, and where heavy fish have been sporting at the tail of a pool or the extreme of an eddy, we have used the latter method, when dressed on a No. 5 or 6. hook, with much success.

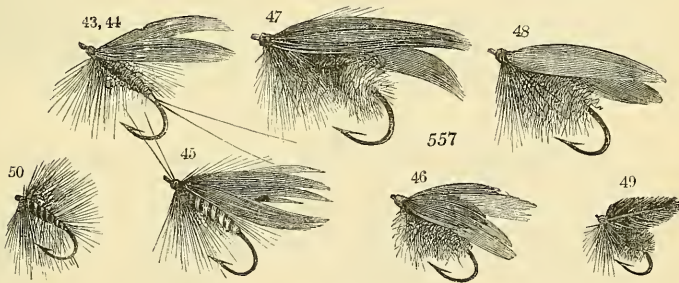
SUBJECT. 5. *Artificial Flies for June.*

3825. *The palmer-hackles*, and the moths of last month, Nos. 1. 4. 7. 19. to 28. inclusive, and 36. 39. 40, 41, 42. of the last months, throughout this. Nos. 29 and 30. last to the middle of this month.

No. 43, 44. Ephemeral red
spinners.
45. Ori-fly.

No. 46. Hazle-fly.
47. Humble bee.
48. Large blow-fly.

No. 49. House-fly.
50. Blue gnat.

Nos. 43 and 44. *Ephemeral Red Spinners (Ephemeridæ).*

FLIES FOR JUNE.

Wings. — Landrail's wing feather. To be dressed erect.

Body. — Brown red hog's down, ribbed with gold twist, and forked with fibres of mallard.

Legs. — A small fine red hackle carried three turns around the body. Hook, No. 7 or 8.

3826. *Of the red spinners* there are many species, which are all summer *Ephemeridæ*; they differ but very little in themselves, and prove excellent evening flies towards the end of this month and during July. Our books present us with spinners of opposite qualities; and we believe, that where the great red spinner and little red spinner occur in the accounts, the authors mean by the great red spinner the perfect *Imago* of the March Brown, and by the smaller is meant a dun; but where one only of these is mentioned, it is more difficult to decipher which is intended. These descriptions have been so often copied from each other, that it is probable the authors themselves are not always sure of their own meaning.

3827. *Taylor's method of dressing the red spinner* is applicable to the second of them; but we think for quiet waters the first is to be preferred. In disturbed waters and cloudy weather, we would recommend the second, which Taylor dresses as follows:—"The wings are of the greyish feather of a drake tinged with a kind of reddish yellow, which is not to be found on every drake; the body, gold twist, with a red hackle over it. In making it, whip in the

ends of the twist and hackle together at bottom, and lap your silk back again up to the feather for the wings; then take the twist, and lap it close all the way up as high as the silk, and fasten it, cutting away what remains of the twist; with the hackle rib it neatly until you come up to the wings, and there lap it twice or thrice round; then fasten, and, dividing the wings, finish the fly. This is chiefly an evening fly in the month of July only, and is best used as a dropper. It is taken very eagerly by the chub."

No. 45. *The Orl-fly (Sialis lutarius).*

Wings.—A brown hen or a landrail's ruddy feather. To be dressed long and close to the back.

Body.—Ribbed alternately with dark brown and claret dubbing, adding two antennæ, or horns.

Legs.—A sooty black hackle. Hook, No. 6 or 7.

3828. *The Orl* is a handsome looking fly when well dressed, and will kill from the beginning of June till the end of July, there being successional supplies from caddies of this species. It is, however, only an occasional killer; but when it is taken it may be used at all hours. We have found it on some waters a favourite; but on others, trout would not even rise to it. It is too large and showy to be used when the water is low, but we have employed it with advantage when it has been clearing after a flood. We have seldom stirred a grayling with it; but the salmon trout will often take it, particularly if dressed on a No. 4. hook. It is also called the Alder-fly.

No. 46. *The Hazle-fly, or Ladybird (Coccinellidæ).*

The Elytra.—A small stumpy portion of the red feather of a partridge's tail, or hen's wing. To be dressed as shown in Wheatley's *Rod and Line*, p. 76.

Under wing.—Transparent looking feather of a hen blackbird, rather longer than the former, or a dark dun hackle.

Body.—Dubbed thick and round with dark purple mohair and a small quantity of brown fur intermixed, which when picked out form the legs. Hook, No. 7 or 8.

3829. *The hazle or ladybird-fly*, known also as the Welshman's button, and by some called a buzz-fly, may likewise be dressed as a hackle-fly by making a short thick body of peacock's harl, with a very fine bluish hackle dressed round two-thirds of it, and a bright red hackle dressed full in front of this. This method is very well received by trout, and particularly so by grayling, when they are in the humour to take these hard winged flies. The original appears in this, and lasts through the two next months; it is taken through the day; but though it has gained the character of a killing fly, it is only occasionally that it proves so. Like all the beetle flies, it forms a stumbling-block to anglers. Bainbridge does not consider the hazle-fly as the cow-lady; neither is it, he says, the Marlow-buzz. On a reference to the "Flyfisher's Entomology," it will be seen that these discrepancies can be reconciled. Mr. Wheatley's beetles are novelties. See above.

No. 47. *The Humble Bee (Bombus).*

Wings.—Of the cock blackbird. To lie flat.

Body.—Fore part dubbed thick with black glossy mohair, or fur; hinder part of a deep orange.

Legs.—Dress two-thirds of the body with a brown hackle. Hook, No. 3 or 4.

3830. *This proves during the summer months* a killing bait for chub: for trout it is more uncertain; but that it will take them, we have had many opportunities of witnessing. In deep pools, or under alders, willows, &c. where old roots and water worn banks have occasioned gentle eddies, chub are often found; and they usually occupy the more quiet parts of such situations where also trout frequently lie in ambush, not however in the direct still water, but a little removed in the line of the curling stream; and it is no uncommon circumstance for the angler when intending the capture of a chub, to raise a trout by means of this fly instead. It is therefore always well to be prepared with some varieties of this humble bee, but dressed on a No. 5. hook, as our southern trouts' mouths, thanks to poachers! are not often capacious enough to take in one dressed two or three sizes larger. This bee may likewise be represented by a hackle-fly dressing, and we have frequently seen it with its body dubbed as directed; and the dark red striped cock's hackle dressed over the whole palmer-like. It will kill trout very late in the evening of a hot summer day in sheltered deeps, and is perhaps then no less likely to prove successful as a trout fly than most others, particularly if it be ribbed with some very fine gold twist.

No. 48. *The large Blow or Flesh-fly (Musca carnaria, &c.).*

Wings.—A starling's or snipe's feather. To be dressed flat.

Body.—Dubbed with black bear's fur, and a very small portion of glossy purple mohair with it, and tied with light brown silk. Dress the body full, and pick out the dubbing to make it look rough. Head large, of brown silk.

Legs.—A very dark brown or black hackle, dressed two turns only behind the wings.
Hook, No. 5 or 6.

3831. *There are others of the muscidae*, still larger than the *carnaria*, as *striata*, *vomitaria*, &c. The wings of our large fly are tipped with orange at the base, and it may be imitated by a black harl for its body; the wings of a hen blackbird's feather, with a bright ginger hackle wound around nearly the whole of the body to serve for legs, as well as to add to the fulness of the body. Hook, No. 4 or 5.

No. 49. *The House-fly (Musca domestica).*

Body.—Black ostrich harl, dressed moderately thick and full.

Wings.—A lark's wing-feather. To lie flat and extended.

Legs.—A dark dun hackle. No. 9 or 10. Some have recommended a feather hackle-wise from a starling dressed with brown silk, the legs and wings both formed of the same.

3832. *The house flies and the flesh-flies* every angler knows will kill coarse fish, and there are times when even trout and grayling, in the absence of aquatic insects, will readily take them. Even when the former are on the water, they will sometimes by a sort of capriciousness of appetite rise for these in preference to the usual favourites. This is particularly the case at all hours throughout gloomy days, and in the evenings after bright ones. Later in the evening in deep water the larger of these flies will often prove successful, while the smaller will kill when the water is fine and low; in cold blustering weather these varieties will often succeed also. For chub they are very killing, and to the amateur whipper for dace they offer by far the most tempting bait we know of, particularly for those numbered 36 and 48. Roach are likewise enticed by them, and in autumn, if to the tail of one be added a small gentle, the temptation to the roach proves irresistible.

No. 50. *The Blue Gnat (Culex pipiens).*

Body.—Bluish dun mohair, with a small dash of orange coloured floss silk mixed with it; or otherwise use all dun dubbing and whipped with orange silk.

Wings and legs.—Formed by dressing over the whole a minute dun hackle. Hook, No. 10.

3833. *The blue gnat* will be well received by both trout and grayling towards the latter end of this month, when the water is very fine and low. In the summer tours of the angler, if he be not a dresser himself, he should never go without these—the black gnat, the blue-blow, and the small house-fly, as he may expect summer droughts in the waters he visits. In August and September the blue gnat is more acceptable to grayling than it is to trout.

3834. *The midge (Culex pulicaris)* is a small variety of gnat, and if a dressed bait of the kind be attempted, it should be done with darker materials, and on a hook, No. 11 or 12., when it will prove an excellent killer, particularly of the grayling of the Wye and Lug.

SUBJECT. 6. *Artificial Flies for July.*

3835. *All the palmer-hackles of last month* are proper for this also: the same may be said of moths likewise. The flies, Nos. 1. 4. 7. 19, 20. continue throughout; Nos. 26, 27, 28, 29. to the middle of the month only. The June flies, Nos. 35, 36, 38, 43, 44, 47, 48, 49, 50. continue through the whole of it. Towards the end of the month the general hue of the duns begins to exhibit somewhat of a change.



FLIES FOR JULY.

No. 51. Large black ant-fly.

No. 52. Large red ant-fly.

No. 53. Blue-blow.

No. 51. *Large Black Ant-fly (Formica fuliginosa).*

Wings.—A clear sky-blue feather from the seagull, pigeon, or tom-tit's tail, with a very fine glossy fibre.

Body.—Black ostrich harl, dressed thick at the thorax or chest, then very thin, and again thick behind (fig. 558.).

Legs.—A deep brown hackle carried round two turns only, close to the wings. Hook, No. 7 or 8.

No. 52. *Large Red Ant-fly (Myrmica rubra).*

Wings.—A starling's or snipe's wing.

Body.—Copper coloured peacock's harl, dressed as the preceding.

Legs. — A ginger hackle of two turns only behind the wings. Hook, No. 7 or 8.

3836. *The large ant-flies* are said to appear about the latter end of June, yet they certainly are not worthy of notice until towards the second week of July in most seasons, and sometimes even later than this. Very hot early summers may hasten their evolution, and we have observed them even before the earliest time ordinarily mentioned for their appearance: but the more general time, gained from near twenty years' observation, is that which we have given above. In very warm weather, particularly when it is gloomy without electric clouds, ant-flies are most killing baits during the principal part of the day; but they cannot be said to be good baits either for morning or evening. The originals are not aquatic insects, but they are so generally distributed about, and so helpless on the wing, that they are constantly falling into the water by accident; and as this is as likely to happen on both still and stream, so to that is attributable their valuable property as baits of killing on either. In the entomology of angling, the natural history of this interesting race of insects is sketched.

No. 53. *The Blue-blow.*

Wings. — Any small fine-fibred blue feather, as of the tom-tit's tail; a wing feather of a Merlin hawk, &c. To stand erect.

Body. — Blue water rat's or mole's fur: the *legs* a fine light blue hackle, with two fine hairs for a fork. Hook, No. 10, 11, or 12.

3837. *The blue-blow*, in the original, is so small that it requires to be dressed extremely fine. On the water it looks like a black morsel of wool, or, as has been observed, like a lump of soot. Minuter inspection will find it animated and floating down the stream, with its tiny wings erect, and intent on continuing its existence by proxy, or, in other words, employed in depositing its eggs on the liquid surface. It is first met with in July, but not in very great quantities; by degrees, however, the numbers augment until the water is covered with them, towards noon, during the hot days of August. When the water is so fine and low that hardly any other deception can tempt the wary trout, the blue-blow will succeed if used alone; at other times it is best employed as a dropper.

SUBSECT. 7. *Artificial Flies for August.*

3838. *The palmer-hackles* are still effective throughout the whole of this month. The moths also will yet be found killing in the evenings of warm days; but towards the end of the month they can seldom be used for night-long fishing, unless the weather be unusually mild. The earth is now parting with its heat, and its chilly inhabitants retire to recesses. The duns of the last month are all of them partially taken during this; but it is to be observed, that towards the latter part of it the lighter varieties (with the exception of the spinners) give place to others of deeper tones of brown and blue, which increase in their intensity as the season advances, much in the same manner as their various shades lighten progressively during the summer. The flies, Nos. 1. 4. 7. 19. 35, 36. 38. 43, 44. 46. 48, 49, 50. may likewise be used throughout; some with the usual success, and others with a limited prospect of it at this advanced season. The large ant-flies, Nos. 51 and 52. are sometimes continued through the first week of this month. The blue-blow, No. 53. is an important bait in the early and middle parts of the month, or as long as it continues sultry.

No. 16. Orange bodied dun.
7. Blue dun.
43, 44. Ephemeral red spinners.

No. 28. Little whirling dun.
54. Little black ant.

No. 55. Little red ant.
15. Red dun.

3839. No. 16. *The orange bodied dun.* Our former remarks on the aquatics, particularly of the ephemere, have pointed out the autumnal succession of a new race, which in appearance and habits so nearly resemble those of the early months, that the artificial representatives formed on the same principles are readily taken by the trout. These later ephemere are singularly effective in capturing grayling, for which they are most killing baits. The orange bodied dun of this month is a sort of herald to the approaching autumnal season, and appears about the beginning of it, alternating with the others for a few weeks. It is, like its congener, a midday fly.

3340. No. 7. *The blue dun of this month* (p. 1149.) is essentially the same as that of the last, and is most effective when dressed of different shades of colour; by which means, whatever variety appears on the water, may be successfully represented, and will kill all day. This is a most excellent grayling fly, and varieties of it are met with in fine seasons until November, as may be seen under grayling fishing.

3841. Nos. 43 and 44. *The ephemeral red spinners* are both valuable flies during the hot mornings and evenings of bright days in August, and throughout the whole day in gloomy weather: they are also killing flies for grayling.

3842. No. 28. *The little whirling dun* (p. 1160.) of August is the whirling blue of Bowler, and the representative of the whirling dun of June. It is indeed probable that there is a scanty supply of them during the whole of July, and of the beginning of this month also, but

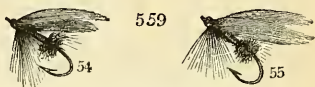
about the middle it appears again in considerable numbers, so as to merit the character of an August fly, when it proves, like the former whirling dun, a good killer in brisk breezes, and in such weather as will not allow some of the more tender duns to come on the water. It is equally taken by both trout and grayling.

No. 54. *The little Black Ant (Formica fusca).*

Wings.—Any fine fibred feather of a dun tinge.

Body.—A little black harl, dressed with the projecting parts like No. 51.

Legs.—In the finishing of the body wrap one turn of a black cock's hackle under the wings, or otherwise introduce a small piece of dark fur, which, when picked out, will furnish the legs. Hook, No. 9 or 10.



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FLIES FOR AUGUST.

No. 55. *The little Red Ant (Formica flava).*

Wings.—Part of any small warm tinted feather of the landrail.

Body.—Any warm red fur or mohair, or bright brown peacock harl, dressed to represent the large red ant in appearance.

Legs.—If the body be of harl, add a few turns of a small red hackle. If of fur or mohair, minute hairs from it may be picked out for the legs. Hook, No. 9 or 10.

3843. *The lesser ant-flies*, as the entomology of angling will show, are the females of the busy ants, whose protuberant bodies bear about them the supplies for future generations. They appear towards the middle of the month, and, like the larger species, are killing in the daytime to both trout and grayling throughout August and great part of September.

3844. No. 15. *The red dun* (p. 1155.) of April is represented in a new series in August, with little or no difference in size or colour. The active and observant fly-dresser will be always on the look-out to watch the changes in the shade of the successional supplies, which vary every few days by certain but by imperceptible degrees. These changes must either be met by a large supply of varieties, or they must be provided for on the spot by the nimble fingers of the artist; for however ample our list, and however full our directions, unless the nice shades of alteration in the living flies, corresponding with the growing or declining season, be watched by the angler himself, and provided for by similar alterations in his representatives, they will be of little use. The red dun of August continues through this month and the next: it is also, in some seasons and some waters, to be met with in October, and then is a very killing grayling fly. In our opinion, the zealous angler is more likely to become the subject of mortification in October than in any other month, if grayling be excepted. We were once localised in Wales during this month, and principally to enjoy the fishing which that autumn afforded. Two or three cold days prevented the trout race from showing any sport, and the local anglers, one and all, averred there would be no more sport that year. We therefore returned to England for cock shooting, which did not turn out so favourable as we expected; and what made our ill luck doubly mortifying was, the accounts which we continued to receive of the sport which each individual of the party met with. Unless you are actually glutted with sport, therefore, never leave even in autumn for the mishap of two or three blank days.

SUBSECT. 8. *Artificial Flies for September.*

3845. *The palmer-hackles may still be successfully tried*, and indeed they will be taken as long as the insects they represent are to be found on the trees and hedges. Nos. 1. 4. 15. 16. 36. 47. 48. 49. and 50. are yet in occasional request by fly-taking fish; but the autumn succession of the duns, similar to those of the early spring months, are now most to be depended on, particularly for grayling. This month draws off the attention of many a fly-fisher to partridge shooting, and although we are enthusiastically fond of fly-fishing, we cannot wonder at it, when we consider that salmon and trout fishing are now lamentably on the wane. Some sport may yet be obtained, however, in favourable seasons through the whole of the month, and for grayling it is yet excellent. The orange bodied dun will be taken in bright days for a week, and occasionally a little longer; and the little whirling dun may be seen in limited numbers until the middle of the month.

No. 7. Golden dun.
5. Dark dun.
3. Alder or red fly.

No. 56. Late dark bodied willow-fly.

No. 57. Cinnamon-fly, or fetid brown.

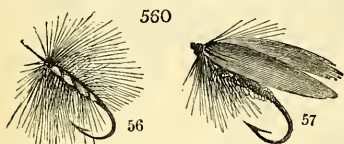
3846. *The golden or blue dun* still appears in fresh supplies, which seem to ramify into varieties in September. One of these is of a more intense violet dun, and the other of a paler hue. This last is eagerly taken by grayling, when the weather is very open, in which case this fly is sometimes continued to the third week; if otherwise, seldom beyond the

second, and on many waters not even so long. It is, however, succeeded by another variety of a still duller hue, which is to be met with in October, in very open seasons in November also, and which is well taken by grayling.

3847. No. 5. *The dark dun of September* is to be dressed in the same manner with the fly so called of March. It is likewise to be fished with at the same times, and is in other respects similar.

No. 56. *The late Dark bodied Willow-fly.*

3848. *This fly* is in appearance the same with the early dark-bodied willow-fly of March. It is to be dressed after a similar manner, and is taken in this and the next month under the same circumstances with that. This fly forms the chief dependence of the grayling angler on some waters, for this and the next month; such trout also as are on the feed prove that they are not yet tired of it.



FLIES FOR SEPTEMBER.

October. The artificial fly differs little or nothing in size, dressing, or mode of using, from that which is described in the March list. This forms now the sheet anchor of the grayling angler's hopes; and we have taken these fish with it as late as the first week in November in the western counties.

No. 57. *Cinnamon-fly, or Fetid light-brown (Phryganeidae).*

Wings.—Of a ruddy cream colour, from a feather of the landrail, or of the woodcock's wing-feather. To be dressed long, large, and flat.

Body.—Cinnamon brown mohair.

Legs.—A red brown hackle. Hook, No. 6.

3850. *This fly, called the cinnamon* from its colour, and fetid brown from both its colour and smell (which is strong and unpleasant when pressed between the fingers), is of the nature of the stone-fly, being bred from a caddis. It is rather an uncertain fly; but when it is found in great numbers, it proves occasionally very killing to trout, especially in the forenoon. Of the natural history of this fly, Mr. Daniel says,—"The ruff-coat is a caddis inclosed in a husk about an inch long, surrounded by bits of stone, &c. almost equal in their size, and curiously compacted together like mosaic. From one of these insects found in the river Wandle in Surrey, and put into a small box with sand, and wetted frequently for two days, at the expiration of that time a large fly was produced, smaller than a common white butterfly, but somewhat resembling it in shape, with two pair of cloak wings, and of a light cinnamon colour." The author of *Salmonia* also alludes to this fly, and to No. 56., or the late dark bodied willow-fly, when enumerating a few of the principal flies which are found on the Colne. He observes, "There are two other flies which appear in the end of September, and continue during October if the weather be mild; a large yellow fly, with a fleshy body and wings like a moth; and a small fly with four wings, with a dark or claret coloured body, which, when it falls on the water, has its wings like the great yellow fly, flat on its back."

3851. *With September* we close our monthly list of flies. The races of winged insects which now appear are fewer, less varied; and most of the fly-taking fish, following the course of Nature, retire to deep waters, and seek other food. With trout, the chances of sport lessen every day; with salmon it is the same; and were it not that grayling are yet inclined to take the autumn duns, a blank almost would present itself to the fly-fisher.

3852. *October fly-fishing* is in this month likely to be even less productive than in the last. The ardent lover of the sport, however, will probably try; and he may perchance occasionally, for a few hours in a bright day, or in a warm gloomy one, by means of those flies which made their appearance in September, raise trout. Both varieties of the blue dun are yet to be seen on the water; these, the dark dun and the late dark bodied willow-fly, with the alder or red, may be all considered as proper flies for this season. The crowding has not yet wholly disappeared, and therefore its representative may still be used on a blustering day, as well as the gnats for a bright one. Grayling form now the principal ground of hope for sport, and they fortunately continue to be successfully tempted in this month by the whirling blue duns in fine weather; when it is otherwise, the under water fishing suits them best, with gentles for the bait.

3853. *November fly-fishing* will afford exercise, and seldom much beyond it as regards trout, which are now getting completely out of season, and have retired to the deeps. Grayling are however yet to be occasionally taken, as some winged insects, particularly late duns and spider-flies, are still on the water, though it is probable that a hook with a pair of wings and a gentle at the point will more certainly tempt them, particularly if sunk four or

five inches below the surface. A few gnats also, and other small flies, still hover about the edges and over the streams, and with representations of these sometimes amusement may be gained in fine mild days without strong night frosts.

3854. *December fly-fishing* is what we know little of. We can hardly venture even to counsel the trial, and certainly we shall not accompany the tyro at this season. We have heard of whipping with gnats and other small dark minute flies, and, as an amusement, the water may as well be flogged as the boy's top; but we expect the gain (which is exercise) is usually the same in the one case as in the other. Fish however, like ourselves, are liable to fits of caprice, and will sometimes defy all rule: even a December day may therefore yield an *unexpected* prize: it may also yield, what might be *expected*, rheumatism. We would therefore recommend this month's fishing to be accompanied with a mailing of flannel next the skin — and with this warning we conclude our season.

SECT. II. Artificial Flies used in Salmon Fishing.

3855. *On the subject of artificial flies for the taking of salmon.* If we were to say, that in this place we had any thing very novel to offer, we should be guilty of angling quackery; for although we have dressed many salmon flies, yet we never did it on any particular principle except custom or local usage, because we think these fish are influenced by caprice or a love of play as much as by any choice in the nature of their insect food. They certainly rise to the artificial bee, wasp, tenthredines, &c.; but they do it just as readily, and even more so, to a jumble of gaudy feathers representing every thing and nothing. We shall therefore select from different writers, either such flies as they themselves particularly recommend, or such as we can recommend from having successfully used them; and elsewhere we shall offer some engravings of the most killing salmon flies now used by our most successful salmon anglers.

SUBJECT. 1. Salmon Flies of Bainbridge.

3856. *The flies which follow* are principally derived from the directions of accredited northern salmon fishers, collected either from their writings, or gained by their personal communications, as we met with them in our travels. Whenever we have been fortunate enough to make a favourable addition to one of usual repute, or have actually invented a successful one, we have, as may be supposed, noted it. Although we have taken salmon in England, Wales, Scotland, and Ireland, yet we are too well aware of our comparative inefficiency to treat of them as we wish. Large salmon flies should be dressed upon two or three lengths of gut twisted together; and it is necessary that the silk in dressing should be brought beyond the shank of the hook, and wrapped four or five times round the gut, so that the sharpness of the steel may not easily cut it. In dressing the gaudy flies for salmon, the maker may freely exercise his fancy, for it is impossible for him to be too extravagant. The only caution necessary to be given is, that he should avoid introducing too great a weight of gold or silver wire, which will prevent the fly from being thrown neatly, and will cause it to sink too much under the water. For the same reason beads, which are sometimes used to represent the prominent eyes of the dragon-fly, are reprehensible.

3857. No. 1. *is a spring fly of Bainbridge.* Its wings are made of a dark brown mottled turkey feather: the body of orange camlet and mohair, with a bright brown cock's long fibred hackle for legs. Hook, No. 2 or 3. As the season advances, it is recommended to add a little tinsel or wire to the body to render it more showy.

3858. No. 2. *is called a quaker fly* from its sober colours, and is dressed of any copper or dirty yellow feather proper for wings, with lemon coloured mohair, and a little brown fur or camlet for a body: a dusky ginger hackle over the whole will furnish legs. Hook, No. 3.

3859. No. 3. *Wings* from the cormorant, or mottled feather of the mallard, with a body of dark sable ribbed with gold wire, and forked with two dark fibres and a small yellow patch of floss silk at their setting on: wind around the whole a dusky red hackle for legs.

3860. No. 4. *is a gaudy fly*, having the wings formed from the extreme end of the feather of a guineafowl, which should not be stripped but left entire: a blood red hackle from the dyed feathers used in the wings should be so placed as to show itself beyond the guineafowl's feather: dub the body with red harl, and over it wrap a bright yellow hackle: the head may be made of the green feather which forms the eye of the ostrich's tail, and a few fibres of the same may be added as tail whisks.

SUBJECT. 2. Salmon Flies from Salmonia.

3861. No. 5. *A jay's hackle*, a kingfisher's feather under the wing, and a portion of the golden pheasant's tail feather for the body: for wings, the eye part of the Argus pheasant's tail.

3862. No. 6. *A bright Java dove's hackle*, blue feather of a kingfisher, and the red feathers of a parrot for a body, with the golden pheasant's feathers for wings.

SUBJECT. 3. *Salmon Flies of Taylor.*

3863. No. 7. *The salmon flies of the spring season* must be made much larger, and more gaudy, than those used in summer: use the hook No. 1.: the feathers for the wings, the darkish brown speckled part of a bittern's wing stripped off from the stem: the mixture for the body, the reddish brown part of hare's fur and deep copper coloured mohair: the tail forked with two single strips of the same feather as the wings: a bittern's hackle over the body for legs; and the head the same colour as the body.

3864. No. 8. *Let the hook be of the same size as the former:* the wings, the mottled feather of a peacock's wing intermixed with that of any fine plain dusky red: the mixture for the body, the light brown hair or fur of a bear next the skin, sable fur, and gold coloured mohair, gold twist, a large black cock's hackle, and a red one a little larger; and for the head, a bit of deep red mohair.

3865. No. 9. *For this fly use a hook,* No. 1.: the wings, the blue feather of a heron intermixed with the spotted reddish part of that of a mallard: for the body, lead coloured mohair, small gold twist, a large white hackle dyed a deepish blue: a bit of the same feather as the wings for the tail: the head the same colour as the body; and your silk a lead colour.

SUBJECT. 4. *Salmon Flies of Captain Williamson.*

3866. No. 10. *Wings.* — Of the reddish brown feather on the turkey-cock's wing, cut from the stem.

Body. — Straw or auburn coloured mohair, yellow silk. Hook, No. 2 or 3.
Legs. — A grizzle, or ginger hackle, from a game-cock.

3867. No. 11. *Wings.* — From a grey gander's broad rump feather, cut from the stem.

Body. — Grey or light brown mohair, light brown silk. Hook, No. 1 or 2.

Legs. — A dirty grizzled hackle from a game-cock, or a bittern's hackle.

3868. No. 12. *Wings.* — The rich brown part of a heron's wing cut off from the stem, or the speckled feather from a peacock's wing, or that from a guinea-fowl's back.

Body. — Drab coloured or olive coloured mohair, pale olive silk. Hook, No. 3 or 4.

Legs. — A small bittern's hackle, lapped only near the wings; forked tail.

3869. No. 13. *Wings.* — From the eye of a peacock's tail, cut from the stem.

Body. — Deep green mohair, light green silk. Hook, No. 2 or 3.

Legs. — A white cock's hackle dyed pale dirty green, or jay's striped blue and white.

3870. No. 14. *Wings.* — A rich dark brown speckled feather from a bittern's wing.

Body. — Coffee coloured mohair or the fur from a hare, coffee coloured silk. Hook, No. 1.

Legs. — A bittern's hackle, or a ginger game-cock's; tail forked.

3871. No. 15. *Wings.* — The greenish dark shining feather from a drake's wing cut off.

Body. — Bottle coloured mohair, silk deep chocolate. Hook, No. 3.

Legs. — A black cock's hackle, or a deep coloured one; tail forked.

3872. *These are all killing flies*, as we are informed by the author, who instances Nos. 10, 11, 14, as in common use in the Highlands of Scotland. The others he considers as more appropriate to warmer waters. To these we shall add two fancy flies of our own recommendation.

3873. No. 16. *The jay.* Dub with green ostrich harl, and rib with gold twist, adding a head of scarlet. Use the barred blue feathers of the jay for wings, and wrap a hackle of bright orange colour over the upper half of the body.

3874. No. 17. *The peacock.* Dub with orange mohair, and rib with silver, adding two green strands of a peacock's eye feather for tail whisks. For wings add two eyes of a small tail feather, or the topping feather of the peacock: for legs, wrap two turns of a dark hackle under the wings. Hook, No. 1.

SUBJECT. 5. *Salmon Flies of Mr. Lascelles.*

3875. *The Rev. R. Lascelles* was a gentleman known to us as a proficient in fly-making, and a travelled angler, both in the northern and southern districts; but we believe that Wales was the scene of most of his piscatory wanderings. He observes in his *Letters on Sporting*, that all the salmon flies of North Wales, except the wasp and hornet, should be made to imitate dragon-flies, being the only large ones that are seen playing about the rivers there. "Their bodies should be long and slender, made of floss silk, of blue, black, claret, and in short of various colours, some ribbed with black, and all with gold or silver plated wire not twist, for this is not sufficiently predominant in the water. As these flies have very long bodies, it is frequently better to extend the silk to the upper part of the

hook, to make them appear longer than it would otherwise admit. The wings of all should not have too much feather in them, and those of most of them should be of various colours; as, for instance, a few fibres of the most close and fine feathers of the cock pheasant's tail, a little blue, purple, yellow, or gaudy colours of foreign birds, and some fibres of the grey feathers of a mallard. In order that the wings may lie flat on the back of the fly, when drawn through the water, you should not, in the making, extend them too far apart. The hackles for the legs should be black, red, or dun, or those that are red and black at the root; but the preference is generally given to the feathers from the saddle of the cock, because the fibres are stiffer and the feather longer, which will enable you to make the body to any fulness you may desire.

3876. "*At the latter end of the season*, when salmon make up the rivers for spawning, the wasp or hornet is a capital fly. The wings are made from the fine fibres of the cock pheasant's tail (I mention the word *fine*, because some of them are so wiry that they will not tie well together); the body of yellow worsted, dyed fine wool, or floss silk, ribbed with black and made full and a large red cock's hackle or saddle feather, black at the roots, wrapped several times under the butt of the wings, for legs. This is the method of making salmon flies in North Wales; but as the Dee is the favourite river in that part of the country, and as it has a fine gravelly bed, probably the method is adapted for that river alone.

3877. "*In South Wales*, on the Wye, they chiefly use the bittern's hackle for wings, which consist of four, those near the head being somewhat longer and placed at a very small distance from the others; the bodies, which are forked with four dark fibres of a mallard's feather, are of fine wool, dyed various colours, and mixed to please the fancy; the legs always of the dun cock's saddle feather in the early part of the season: but towards the latter end they wing with the feather of a fork, or salmon tailed kite, and the dark mottled red feather of a turkey, the body yellow, and a ginger saddle feather for legs.

3878. "*In Scotland is used a fly called the tartan*, which is made, the wings of the dark speckled brown of a turkey's tail, mixed with twelve harls from the peacock's tail, six in each wing; the body, a mixture of every colour you can imagine, forked with the dark fibres of a mallard's feather, and a blood red cock's hackle over the whole: this is an extraordinary fly, and the body must be made with each colour separate, beginning with bright yellow and ending with black, neatly ribbed with gold twist, and the head of copper coloured mohair.

3879. "*A second fly* has the same feather for wings, only of a reddish cast; the body bright brown hair, or fur of a bear, mixed with gold coloured mohair, and ribbed with gold; and two hackles, a black and a red one, a little larger, for legs, and the head of deep red mohair.

3880. "*A third fly*, called the black dog, and the most killing of all, has its wings of a blue heron's feather, mixed with red turkey; the body of lead coloured mohair, ribbed with gold, and a large black cock's hackle or saddle feather for legs; the head, a little dark green mohair and green silk. These flies are all made on a hook (No. 1.), but decreasing in their full size regularly as they are placed. In making this last fly, take care to divide the wings with the gold twist, bringing it backwards and forwards three or four times betwixt them, and making it appear as much as possible about the head.

3881. "*A fourth fly* has its wings of the speckled feather of a kite or buzzard's wing; the body light blue hog's wool, and a little lead coloured mohair mixed, forked with four strips of the copper coloured feather of a mallard; a dark blue hackle for legs, and the head of the same colour.

3882. "*A fifth fly* has its wings of the mottled grey feather of a turkey's tail; the body, a copper coloured peacock's harl, and green plover's topping, ribbed with silver, forked with too long fibres of the tail feather of a cock pheasant; a dark grizzled hackle for legs, and made with dark red silk: these two flies are made on a hook (No. 2.).

3883. "*A sixth*, called the golden fly, has its wings made from the feathers of the golden pheasant, the common pheasant, the parrot, peacock's harl from the tail, the turkey's mottled feather from the tail, and two blue mottled feathers from the jay, one placed on each side of the wings, with the mottled part downwards; the other feathers should be mixed equally, forming altogether a moderate sized wing: the body should be made of green silk ribbed with gold, and a strong red cock's hackle, or saddle feather, for legs, with the head of green mohair.

3884. "*A seventh*, called the silver fly, is made in the same way, only ribbed with silver, and a dun hackle for the legs: these last are made on a hook (No. 3.), and are taken from the middle of June till the latter end of August in a fine clear water. After this period you must return to the former flies, which, by making a little variation in their size, will never fail affording you diversion."

3885. *Notwithstanding any confidence* in the effective killing properties of the salmon flies we have here enumerated, as well from our own experience as the acknowledged reputation of each author they are derived from, yet we shall, in treating of the methods of fishing practised in the different portions of the United Kingdom, under the head *Localities of Fishing*, p. 1191. be enabled to append thereto a more modern list of the effective flies now

used by the best fly-fishers for the salmon and its varieties. These have been engraved from very accurately dressed flies by Mr. G. Bowness, jun., 33. Bell-yard, Temple-bar, of whose abilities, both as an angler and fly-dresser, we have already at p. 1129. had occasion to make mention, and from whom any of these flies, by notification of the number and the locality they are wanted for, can be had. The most popular of these flies will be figured in the various localities yet to be treated of. Those appropriate to England may be gained from the salmon flies already enumerated. A few of those appropriated to Wales will appear on two cuts, as will those of Scotland also. We shall give a list of the best general flies for all the principal rivers in Ireland.

CHAP. XII.

THE PRACTICAL PART OF FLY-FISHING.

3886. *The various implements employed in fly-fishing have already been described, generally and individually.* We have also treated circumstantially on the baits used, both natural and artificial. A reference to the index will direct the reader where to find almost every article, however minute, connected with the one or the other. At present we shall principally confine ourselves to a detail of the best methods of placing before the objects of our sport the several natural and artificial fly baits we have described. We have already recommended the use of the single-handed rod in fly-fishing (p. 965.), and we have given our reasons why we think this practice to be the most graceful, the most scientific, and, as we believe, the most successful also. A double-handed rod is, in our opinion, admissible only on some extraordinary occasions, where a more than usual length and strength of both rod and line may be peremptorily required. We admit that such occasions do occur, particularly in salmon fishing, where the extent of the water, and the probable size and strength of the fish, render these means indispensable. It may also happen that the trout-haunts can only be reached by a rod and line of unusual dimensions.

SECT. I. *The Practice of Throwing the Fly.*

3887. *We sometimes find this called whipping,* as well as throwing; but as regards the higher walks of the practice of fly-fishing, the term is a misnomer; for he who flogs the water will never catch any such fish as are the usual objects of the professed fly-fisher's pursuit. An artificial fly can only be exhibited to these quick-sighted and wary tribes by lightly and delicately placing or delivering it on the surface, which is effected by an action but little resembling that of a coach whip, from whence probably it derived its name. "He who throws his line back as a coachman does his whip, will, like him, make it crack when it gets to its full extent behind his back, losing many a good fly, and coming forward again with such violence as, instead of alluring, will scare the fish."

3888. *Whipping,* however, as being a term almost conventional for the minor fly anglings of bleak, dace, and other small fish, practised only by *whippers* who *flog* the water abundantly, may be retained in our vocabulary without breach of piscatory propriety; but as here used, it can only express those minor fly-fishings: the exhibiting of the natural flies, likewise, is sometimes called whipping, but with little more propriety.

3889. *To throw a fly* with accuracy, and yet with such delicacy that it shall rather seem to alight than to be forced on the water, is acknowledged essentially necessary to constitute not only the accomplished, but also the successful, fly-fisher. The art of doing this is not altogether an easy one, and is only to be acquired by much attention and considerable practice. Few actions call forth more admiration than that of throwing a fly handsomely on the water; the attitudes in which it places the operator are manly and graceful in the extreme; and when it is considered that in the hands of a master, a line of great extent appended to a long rod is made to place a mimic insect at will on a spot a few inches in circumference which is many yards distant (and this any expert thrower can do), we are equally struck with the effect produced as with the dexterity exhibited.

3890. *The first lesson in fly-throwing* should be taken by the learner with a rod which he can manage in his hand with perfect ease, by holding it by such part as will give him an equal command of both ends. The exact spot at which this may be done will depend on the weight and resistance of the butt to the action and elasticity of the other joints; but in a justly proportioned rod, this point of counterpoise should fall somewhere between twelve and eighteen inches from the butt, and the reel should be placed just below it; which matters having before been dilated on (p. 965.), need not further occupy our attention here.

3891. *Throwing with either hand* is also essential to perfection in the art; it greatly lessens fatigue, and the change of hands is of consequence likewise under some circumstances of situation, and under some changes of the wind; as, for instance, when it blows from the right directly across the angler; in which case throwing with the left hand is the best means to be employed. Changing hands also prevents blisters from forming.

From the very commencement, this practice of using either hand should be adopted, and the throwing should be made alternately with each in equal degree, until either can be used with similar dexterity. This we cannot insist on too strongly, as being of much importance in the art. Long continued throwing with one hand always tires, and very often even strains the wrist; and it will be found that a slight wrist strain only will wholly incapacitate the angler from throwing for the remainder of the season. But he who can make use of either hand has the remedy before him; nay, he has what is better, he has the prevention; for the ambi-dexter seldom fatigues himself to this extent. A powerful arm, with a strong but pliant wrist, are great advantages in this art; for although dexterity is the principal requisite, the evolutions of the rod require the arm of an athlete to continue them through a full day's fishing.

3892. *The initiatory practice is now directed to the conducting of the line;* and this is properly commenced with a tapered one, very little if any more being drawn from the reel than the length of the rod, having at the end a full sized fly with its hook broken off at the bend to prevent its catching in the matters it passes over; for we should strongly recommend the practice to be first pursued on a newly mown grass plot, the thrower being elevated a little, as if on the banks of a stream, that he may command a more perfect view of his throw. It is not of material consequence whether there be wind or not in this stage of the practice, but it is important that what wind there may be should blow from behind. And as throwing with the wind is more easy than without, we should rather prefer the early lessons to be conducted in a perfect calm. Having placed some pieces of board, card, or tile, about six inches square, in various directions around him to the extent of his reach of line, it should be his endeavour in throwing to place his fly directly on these pieces alternately, doing all in his power to make his fly drop on them at once and as lightly as possible. When this has become an easy practice, lengthen the line a little from time to time, until an extent of many yards can be managed with ease; for he who can throw the longest line of course greatly increases his sphere of action and his chances of success, particularly when the action is accompanied by a quick sight and a ready hand for striking.

3893. *The practical directions of Captain Williamson on throwing are so good, that we cannot, in justice both to him and the learner, omit making an extract or two from them.* "Take hold," he says, "of the bend of the hook between the forefinger and thumb of your left hand, holding the rod in your right hand at its balance, that is to say, where you have a command over it, the same as you would over a well balanced whip. Let the rod point a little forward, straight before the left shoulder, the elbow being kept close to your ribs, but without the smallest constraint. First, turn your rod with a light graceful motion to the left (still the point a little lowered), and wave it back again in a similar manner, from the left to the right, carrying the point of it backward at the same time, and quitting your hold of the hook, which by this means will go far behind your back; but as your next turn of the rod is forward, and as the point is then considerably lowered, your line will double back and take a new direction, so that your fly will at length be carried completely before you, and give the lead to your line. I am induced to repeat that *the elbow must be kept down* until the line is getting before the rod; that it is then to be raised gradually, so as to throw forward the arm to its full length, the hand coming to a level with the shoulder; and that this motion must be completely accordant with the fall of the fly, so that it may never be checked, but only guided to its destination; for whenever a check takes place, the fly will descend suddenly, and cause more or less agitation on the surface. As you feel the line getting into its proper direction, carry forward your arm with an easy movement, until your hand is on a level with your shoulder. By this means, the little inclination the fly might have to tug, and consequently to be checked short when the line acquires its full extent, will be totally prevented, especially if you yield a trifle more by lowering your hand and arm a little, keeping them in a straight line up to the shoulder: this is the *double turn*. Thus you will cause your fly to light so very gently on the water, as often to leave you in doubt as to the precise spot where it fell, but which is frequently pointed out by the rising of a fish, deceived equally with yourself by the sleight you have attained."

3894. *Snapping off flies.* A difficulty which will take the learner longer to conquer than any other, is the repeated loss of his fly, particularly in a brisk wind, which is occasioned by the return of the line being attempted before it has been fully unfolded behind, when the sudden resistance offered by the hook, which has not yet reached its destination, ruptures the gut immediately where it unites with it. The force applied is exemplified by what occurs in using a long coach-whip: here the thong is thrown forward with great impetus, and before it has reached its full unfolding, the hand is purposely employed in checking it; when the hard twisted whipcord at the end, acting suddenly and violently on the air, produces the sharp cracking vibration so well known. The same is heard, but in a minor degree, with the fly; and we have here a full confirmation that the very excellence of the *whip throw*, is the very bane of the *fly throw*: Colonel Hawker observes on this with his usual acumen:—"Do not draw the fly too near, or you lose your purchase for sending it back, and therefore require an extra sweep in the air, before you can get it into play again.

If after sending it back, you make the counter-spring a moment too soon, you will whip off your tail fly; and if a moment too late, your line will fall in a slovenly manner. The knack of catching this time is, therefore, the whole art of throwing well."

3895. "*Another mode of throwing*," says Captain Williamson, "is with the *single turn*, and commences with the rod pointing to the left, the hook as before: first, bring the point of the rod gradually round to the right side, then making a sweep over the right shoulder, and casting forward, as in the *double turn*: this appears more easy than the *double turn*, but is not so, because it is far more difficult to make the fly light gently when the hand has so little preparation." This mode, and the former one described by Captain W., requires to be well practised to the right and to the left, with and against the wind; and with the wind on the right and left sides alternately: the learner will find many streams which, by their windings, will afford all the desired positions within a very short distance. We will now suppose the fly delivered or thrown so lightly on the surface of the water by the learner, as to raise no more disturbance in it than would be occasioned by the settling or dropping of a living fly. Having so done, it next follows, that he should begin to raise the point of his rod, by gradually dropping the elbow joint and elevating his hand, which will draw the fly on the water towards him. But this should not be done exactly in one uniform drawing; on the contrary, it must be a part of his lesson to learn to do it with a tremulous motion of the wrist, which, acting on the rod and line, will be imparted to the fly. These minute jerking motions of the fly bait will assist the angler's views in two or three ways: first, by representing the natural flutters of such insects as are blown on the water; it also puts the fish more on the alert to seize the bait, fearful that its apparent attempts to escape may snatch the morsel from them: when, on the contrary, a fly moves uniformly down the stream, the fish are often content to watch it, which is usually fatal to the angler's hopes, as during a regular progress they discover the deception, and refuse it.

3896. *Striking the fish* is to the full as important a part of the rod and line management as any. Many strike too slow, many too quick, and a correct few strike at the critical moment. The first lose their object, the second often lose both the object and their bait, while the third secure all. When a fish seizes the natural fly, his jaws find no resistance; he consequently keeps them closed until deglutition follows; and thus it is that in natural fly-fishing it is not found so necessary to be instantaneous in striking: but with the artificial fly the instant the fish seizes it he is apt to find the deception, either by its want of taste, or by feeling the point of the hook, or by discovering the unyielding nature of the material of which it is composed, and he therefore, as soon as may be, *blows* it out again; and thus we constantly observe, when a timid irresolute learner has raised a fish, and hesitates in striking it, fearful of being too quick, or otherwise so paralysed with the sudden attack, that he cannot collect himself for a second or two, and half that time is all that ought to be allowed for the seizure of the bait and the stroke of the angler.

3897. *The striking must be instantaneous* to be successful; for when it is considered that the impulsive effort which is to fix the hook in the mouth of the fish (which has but that instant closed it on the bait), is first to be taken cognisance of by the angler, and then is to be acted on by him through a solid line of communication of many yards in length, it will be evident that a rapidity of action is required almost equal to the thought which willed it; for, as already observed, unless the stroke reaches the mouth of the fish before he has discovered the deception, it is generally too late: fortunately for awkward anglers it is not always so, as the act of ejecting the bait being at the moment of the turning round of fish in their retreat, it happens that they occasionally at the same time hook themselves.

3898. *It is possible, however, to strike too quick*; and this is frequently done by those who are very ardent, as well as by those who, having been convicted of being too slow, attempt to amend by the contrary extreme. We have fished with many young hands, who have struck the instant they saw a fish rise even; and consequently, although the bait might have been struck at, the mouth had never received it, or, if it had, the mouth had not had time to close on it. Striking a fish should be done with a smart, but not with a violent effort. The ardent angler will often strike with such force as to either tear away his hold on the fish, or to become minus by gut and fly, which snap by the sudden jerk. There is nothing better calculated to cure a young practitioner who strikes too forcibly, than to oblige him to whip for bleak, and to pay forfeit for every one he raises above the surface of the water, receiving forfeit for every one he hooks without showing it. The forcible stroke that wholly misses its object often throws the bait out of the water by the violence of the effort; the moderate stroke that misses will not displace the hook more than a foot or two. The critical fish-stroke is made by a very quick but very gentle wrist motion, by which the hand is canted upwards, being displaced about two inches only. Such a stroke made instantly the fish actually reaches the fly (which is learned by habit), at the moment he has closed his mouth on it, and before he has time to throw it out again, is sure to secure the entrance of the hook within the substance of the mouth, without causing great alarm to the fish by any unnecessary violence, for it cannot have escaped the observant angler, that when a trout has been harshly tugged in striking, he commences at once a more determined resistance than when the stroke has been less violent, and his alarm less sudden. Neither can we wonder that his efforts should be extreme, when he is made sensible of his situation by a stab and a drag which has half pulled him out of the water.

3899. *If such critical nicety be required in striking*, it may be here asked, How is it that fish are ever taken by novices? Such a question is reasonable, for such is the fact; but on the grounds we have already gone over, the discordance can be readily explained. Many eager and hungry fish hook themselves, in taking any bait, without hesitation: their seizure of the fly, their closing their mouth on it, and the passing it backwards, are all one instantaneous effort; and on examination, such fish will be often found to have partially gorged the bait. But if the number of fish so taken were arranged against the number of those lost by a defect in striking, the difference would be as five to one of small fish, and as ten to one of those of mature growth.

3900. *The after-management of a fish which has been successfully struck* has been already dilated on (p. 1037.), and to those directions we would refer the learner. Here we must content ourselves with a general hint or two. If the fish be of a tolerable size, immediately throw up the point of the rod, and if the fish give signs of being a very heavy one, then actually force the butt of it so forward as to carry the point over the shoulder, which will transfer the strain on the line to the elasticities of the joints of the rod; and this indication must be pursued until the fish be sufficiently exhausted for landing: we may also take occasion to caution the angler never to let a fish strike towards the weeds, nor up nor across the stream; but, if possible, down the stream only, keeping his head high up in the current to tire and drown him. Likewise avoid letting yourself or your shadow, as well as that of your rod, fall on the water when fishing.

3901. *The wind is greatly assistant to the fly-thrower's practice*; for it takes much of the trouble from off his hands, and does his work also much better than he can do it. When he has learned to take advantage of the breeze, he will allow it to carry his fly to the surface, with no other effort than the simple unfolding of the line; and in the wind, his errors and those in his tackle will be more readily concealed by the ripple which it makes on the water. Without a breeze the novice seldom catches fish; with one, particularly with a warm brisk one, almost any body, with almost any bait, will take them. But in a brisk wind it behoves the young angler to remember, that unless he yields his line (particularly if he have much out) to the action of the wind more than to his own, he will snap off a fly at every other or every third throw. Unless the wind be very strong, prefer casting the line rather obliquely than directly down the wind, as the fly will descend more naturally by remaining suspended for a moment in the wind before it fall; thus thrown, it likewise occasions no disturbance in the water.

3902. *The beginner should also practise throwing against the wind*, which, when attained, often proves very convenient, as to fish with the wind is not always in our power, and it is not unfrequent that the sheltered bank is the favourite resort of the trout. When the gale is very boisterous, it is a good practice for the angler, instead of having to open the fly-book for the selection of his flies, either to have such as are likely to be wanted well hooked into his hat, which we will suppose, in accordance with a former recommendation, to be a drab beaver, as the least conspicuous, p. 998. It would prove still more convenient, where the angler uses more than one fly, that is, where droppers are added to the end fly, to have *two or three foot-lengths of gut or hair*, as the case may require, with the proper flies affixed. Two or three such foot-lengths may be wound round the bole of the hat, one above the other. Of the advantages and disadvantages of using more than one fly at a time, we have already treated (p. 974.). It will be evident to the most experienced, that more than one cannot be used without great inconvenience in weedy as well as in narrow waters; but that in wide stony streams one or two droppers add much to the chances of sport.

3903. *A knowledge of what are called standard flies* will often prove a considerable assistance to the tyro, who may be at a loss with what to commence his practice; we therefore offer him the excellent hints of Bainbridge, on what that author considers, in our opinion justly, as standard flies, or such as are suited to most waters and to most seasons: — “Two or three lines may be in readiness with three flies affixed to each. For the first attempt he may use the March brown (or, later in the season, a reduced fly of the same form and materials) at the point, with a dun hackle, having the body light or dark to suit the day, for the first dropper; the second dropper a red hackle, with peacock body. If these flies do not raise fish, after trying two, or three streams, it will be advisable to change them, and put on the following, viz. at the point the sand-fly; first dropper, grouse hackle or wren's tail, with orange body; second dropper, a pale yellow or cream coloured hackle over a bluish body, or one of the ant-flies, as a variety from the preceding five. The bodies of the hackles are to be dressed large or small, in proportion to the water. With some of these flies an experienced angler will take abundance of fish all the year round; and it will be time enough for him to change them when he shall have correctly ascertained which fly is the favourite of the fish for the time being.” Coiled foot-lines thus furnished may, it is evident, be kept ready by the angler to any extent, so as to correspond to days, seasons, and waters. In pursuance of a former notice, we introduce a copy of our monitory card-list of indispensables for fly-fishing; and appended to the trout-fishing practice will be introduced a diary table of sport, p. 1185.

FLY-FISHING CARD.

Rod, reel, and line, each in order.

Fly book — duplicates or triplicates of every *seasonable* fly, on stained and unstained gut and hair; occasional ditto, as palmers, moths, &c.

Or otherwise,

Foot-lengths of seasonable flies, not less than three, varied, with stretchers and droppers wound on your hat. The coils being large, the line is thus readier for use.

Fly-dressing book; see that it is complete with hackles, feathers, dubbings, furs, silks, wax, and spring-pliers. Hooks, *gut- and hair-mounted* and naked; gut and horse-hair lengths, stained and unstained; spare foot-lengths; reel line ditto; gold and silver twist; knife; scissors; disgorging; drag-hook; landing hook or net; pannier, &c.

Occasional,

Spare rod; minnow spinning tackle; devil-bait; fly-minnow; line for live bait; trolling tackle; bait-box, &c. &c.; nor must tying silk for rod mending be forgotten.

SECT. II. *Fly-fishing or Whipping for the coarse and white Fish.*

3904. *To the fish which are likely to take the fly* we must now introduce the angler, having, as we hope, brought him to some dexterity in throwing it. But that we may not scare him with early difficulties, we will first show him such as require little skill to ensnare. It must however be observed of these *white or coarse fish*, as bleak, roach, dace, chub, &c. that, as they are considered to be out of the orthodox pale of the fly-fishing catalogue, and as those who pursue them, though not regular fly-fishers, yet often attack them by whipping and dipping, so it will be found, on turning to our chapter on bottom fishing, that the flies

employed, both artificial and natural, and the times of using them, as there noted, make the anglings for these particular fish complete in one view. This we have done to fulfil a necessary intention, as many anglers get a habit of confining themselves almost exclusively to the pursuit of one or two particular fishes; and with such it is of consequence that all the methods of capture be brought together. We however hope that our own experience, and what we derive from others (and who among us is too old to learn?) will afford the means of offering something new and something instructive in both places; and, as regards ourselves, we are by this means enabled to preserve an appearance of systematic consistency.

3905. *As we consider the fly practice for the white fish* as initiatory to that to be employed against the more active members of the salmon genus, as grayling, trout, and salmon, so we recommend to the young angler, in his pursuit of it, even if he whip for bleak only, still to do it systematically with the true fly gear, and with a due attention to a critical throwing of his fly; we would have him use the same fly-rod, with its full apparatus of running line and butt-spike, for bleak and dace, as he will employ in his future attacks on the larger and nobler finny game. A good method is as easily learned as a bad one; one method is more easily learned than two, and it is more difficult to unlearn than to learn; and with these hints we will leave the matter to his own discretion, venturing however to assure him, that he will have no reason to repent his adoption of them. The natural history of each of the fly-taking fish which will fall under our consideration, has been fully detailed under their respective heads in the chapter on bottom fishing. Here we propose to consider only the means and methods employed in taking them by fly-fishing, artificial and natural.

SUBJECT. 1. *Fly-fishing or Whipping for Bleak.*

3906. *The bleak* (fig. 519. p. 1044.) is solively and sportive a fish as to be called the water-swallow, and consequently is well fitted for initiating the young angler in fly-throwing. Any small artificial fly will raise bleak, as the gnats, Nos. 1 and 50.; the little red and black ant, Nos. 54 and 55.; also the bluebottle, No. 36. when dressed on a No. 10 or 11. hook: and a very minute dark hackle-fly, with a gentle on the point, is likewise a most killing bait. They rise all day in summer, but best in the mornings and evenings of sultry days. (See *Bleak Fishing*, p. 1045., where the matter is also touched on.) In the New River, the young London angler may practise his lessons with convenience and much advantage, as their risings are quick, and therefore they accustom the hand to strike as quickly. We have met with them in almost all our inland rivers, and very amusing little skip-jacks they are, and well calculated to initiate the young fly-fisher.

SUBJECT. 2. *Fly-fishing for Roach.*

3907. *The roach* hardly deserves mention here, as his fly-taking propensities, such as they are, have been noted elsewhere (fig. 521. p. 1048.); but for the sake of system and regularity we have given him a subsectional niche. He will, indeed, suck down several varieties of flies on, or a very little below the surface, at such times as numbers of them are congregated together in still water, at the sides of rivers and near rush and sedge pools. A red palmer or winged fly on a hook, No. 6., during the spring and early summer months, and the same fly at a later period, and in autumn, with a gentle at the end thrown amongst them, will very often take one after another of this assembly. In the evenings of very hot days that have been accompanied with showers, the blue-blow, the ant-flies, and a small red palmer-hackle, will often commit havoc among them. If the light be strong, they will take it best six inches below the surface; if the sun be down, they will take it on the surface. As in these cases they commonly get to the extreme limits of a pool, where they fancy they can bask in security, the extensive throws that are required to reach them, make good practice for the young angler.

SUBJECT. 3. *Fly-fishing or Whipping for Dace.*

3908. *The dace* in our opinion is not sufficiently estimated, and although, as professors of the art, we are aware we ought to blush at owning it, yet candour obliges us to the avowal that we have passed many delightful hours in dace whipping; and we even think it, when trout are not within reach, a very fair sporting-like and amusing fish; and as for initiatory practice also it stands pre-eminent. Captain Williamson says, "The young angler cannot do better than devote one summer entirely to whipping for dace; he will thereby acquire many excellent qualifications, for his hand will move very lightly, so as to cause his fly to light imperceptibly on the surface, which is an object of the greatest moment. He will learn to direct his line correctly to any particular spot; and as he will at times be attacked by fishes of a superior class, he will acquire a knowledge in respect to playing of fishes, and he ultimately convinced that fine tackle is not only the most attractive, but in good hands is generally equal to the subduing of such fishes as the bad angler could never manage, even with stouter apparatus. I lay some stress on this point, being thoroughly satisfied as to both its utility and the indispensable necessity of such an opinion being inculcated

and received before the learner can be said to have made any proficiency. In a word, throwing the fly for *dace* may be considered as the best school to which the angler can resort."

3909. *The fly baits for dace* are either palmers or artificial varieties of the house and flesh-flies. Gnats, duns, and ant-flies, are also taken by them in every mode of dressing. When the angler is fishing for instruction, and we think likewise for *true fly-throwing* pastime, he should use one fly only on his line, which it would be well to have of hair for one-third of its foot-length. If he fish for numbers, it is better to use a line wholly of gut, but extremely fine towards its extremity, which may be tipped with a stretcher, dressed on a hook, No. 8. Two droppers, one on a No. 9, and the other on a No. 10, hook may be added, and all three should be on hair. For early summer, let the stretcher be a bluebottle dressed as a palmer-hackle, with a peacock's harl; the lower dropper may be any dark dun, and the upper a gnat. In the autumn use a black or red ant-fly for a stretcher, a minute house-fly for one dropper, and a gnat or spider-fly for the other. The dace-whipper is referred to the chapter on bottom fishing for further information on this branch also, p. 1046. The black gnat is a general dace-fly. The sand-fly is also deadly.

SUBJECT. 4. *Fly-fishing for Chub.*

3910. *These fish are more readily taken by other means* than the artificial fly: the natural fly is, however, sufficiently successful. Chub will nevertheless rise freely to the palmer hackles, Nos. 9, 10, 11.; to the domestic flies, Nos. 36, 48, 49., and to the humble bee, No. 47., as well as to other showy flies. In the Wye, the Thames, the Trent, and the Lea, we have often thrown, by means of a long line, either a roughly-dressed palmer-hackle ribbed with silver, or a humble bee palmer-hackle, during the heat of a summer's day, when no other fish would rise under shady bushes, and by this means have taken very large chub, which have shown excellent sport. Of all these rivers the Lea and the Wye afford the best chub fishing with the artificial fly. We have thought that on both they take the made fly better than elsewhere. Captain Williamson says, "When you use the fly for chub, you cannot have too fine tackle; that is, in proportion to the size of the fishes. The best mode is, to whip from the head of a boat, which should be allowed to drop very slowly down the stream, by what seamen call 'kedging;' that is, with a very light anchor, or stone, out astern, with just sufficient rope to allow the anchor to trip over the bottom, occasionally checking the progress, so as to go rather slower than the current. In this manner stand in the forepart of the boat, and throw before you down the stream, using either a very nice red spinner on No. 4 or 5. hook, or a large sized oak-fly on No. 5., for at such they will rise well, and afford good sport.

3911. *It is necessary for the angler* to be aware of the strength and determination of these fish, when they are large, and particularly such as are bred in powerful streams, for though they will not continue a vigorous defence for a great length of time, they will struggle most violently at first, and endanger even strong tackle by their extraordinary boundings. We hardly know a better fish to inure a young angler to more powerful game than chub, for they are at once wary and strong.

3912. *Taylor says of chub*, "They are often caught by the common way of fly-fishing with a long line and artificial fly, particularly the red spinner, and they are often taken also when sporting for other kinds of fish. Their biting times are chiefly from before sunrise until eight or ten o'clock in the morning, and from four till sunset in the evening in the summer (though some will take by chance at any time of the day), and in the middle of the day in winter." Salter observes likewise, that "Some anglers, when whipping for chub and dace in the same stream, confine themselves to the red spinner, the oak-fly, and a fly of a dusky or dun colour, all on No. 9. hooks. In the river Lea these flies answer well."

3913. *Night fly-fishing for chub* is pursued in the summer months with the moths, Nos. 39 and 40.; and some of the largest fish are then taken; but the angler must not deceive himself, and suppose he can, because it is night, approach them without caution; on the contrary, little less is necessary at this time than during the day. Something further on this subject appears in our account of the habits and form of this fish, and on the other fishings for it, p. 1054.

SECT. III. *Fly-fishing for Grayling.*

3914. *As the grayling is not common to every river*, and as it shows much sport by its readiness to take artificial as well as living flies, it is much sought after by sportsmen. The natural history of the grayling generally, and the methods of taking it below the surface of the water, are fully detailed in the subsection on bottom fishing (p. 1087.). We shall here consider it only as a subject of the fly-angler's sport. The grayling is more truly insectivorous than the trout, its principal food being derived either from insect larvæ or winged flies produced from them; and it will take both indiscriminately at all seasons when they are to be found. The dissimilarities between the habits of trout and grayling make a considerable difference between them as objects of the angler's pursuit, both with regard to the methods he employs, and the seasons he is engaged in them. Trout as a fly-taking fish is confined within the limits of a few months. Grayling, on the contrary, will seldom refuse them altogether at any season. But notwithstanding their readiness to rise to the surface, from the early spring to the late autumn months, it is yet usual to consider the true grayling fly-fishing season as being from July to the second week in November. This is partly dependent on the circumstance, that during such period this fish is in its greatest perfection, and that from the decline of summer, and through the autumn, it will take flies with great eagerness. It is also perhaps not unlikely, that the secession of the trout from the angling scene about this time has much to do with this exclusive season attributed to grayling fly-fishing; for in some rivers it is common to leave off attempting them with a fly at this time, and to use only gentles or grasshoppers under the water. As far as our experience goes, at

all times, and in all waters, more fish may be taken by the methods practised under the surface, than by those practised on it. It is no wonder, therefore, if the pot-fisher in every country is more favourable to the worm, gentle, cad bait, and grasshopper practices, than to the more elegant but less productive method of well using the artificial fly.

3915. *The identities of character between trout and grayling*, one might be led to suppose, from what we meet with in some angling works, to be uniform; and might conclude that in the same rivers they may always be found; also that the same baits and the same tackle will take either. But the analogies are by no means so close as this; and not only are their habitations, food, and angling seasons different, but their methods of taking a bait and yielding to its force are likewise different.

3916. *On the localities of the grayling*, it is well observed, that "they do not dwell, like trout, in rapid shallow torrents; nor, like char or chub, in deep pools or lakes. They require a combination of stream and pool; they like a deep still pool for rest, a rapid stream above, a gradually declining shallow below, and a bottom where marl or loam is mixed with gravel; and they are not found abundant except in rivers that have these characters." (*Salmonia*, p. 167.) The grayling is more simple, and consequently less wary than the trout; it may be approached nearer, and its voracity prompts it to rise many times to the same fly, and even sometimes after it has been once or even twice pricked; and yet, strange to say, though the fact is well known to experienced fishers, the tackle employed can hardly be too fine for them; and particularly it is necessary to success that the gut be not only of the finest kind, but that it be tinted to the hue of the water also; and for this reason many excellent anglers use hair instead of gut.

3917. *The mode of rising of a grayling* is somewhat different from that of the trout, and may in general be readily distinguished from it, particularly between the risings of those of moderate size. The grayling, it may be observed, shoots upwards from the bottom, the trout lies hidden usually at no great depth, and is ready prepared to elevate itself to take the flies one after another as they sail over it. It is also familiar to us, that grayling will rise oftener to a fly, and yet refuse it oftener than a trout; but they will on the other hand, after a throw or two, again rise, and eventually take it, which a trout seldom will. Sir Humphry Davy thinks grayling altogether more choice in their flies than trout,—an opinion in which we can hardly agree: he allows, that as regards colours they are less particular; and in proof, we have in our own practice taken them with a fancy fly much oftener than the trout. During rain, grayling do not take flies so well as trout; neither after a flood do they come on the feed so soon as trout, which is attributed by anglers to their lying at greater depths; but we rather ascribe it, either to the circumstance of their being gorged with the larvae stirred up at such times, or they may also be sickened with the mixtures which come down. We are led to this opinion from having observed, that even for some days afterwards they have not been so much on the alert at rising as before. Grayling, however, are more ready to rise than trout in very bright weather, particularly the smaller ones; but, like trout in warm cloudy weather, they are by far the most eager; and though we think the wind is altogether less absolutely necessary to grayling fishing than to trout, yet grayling fishing is most successful with a moderate breeze. A cold easterly or north wind is commonly fatal to the sport.

3918. *In striking the grayling* it is necessary for the young angler to be aware that its mouth is smaller and less membranous than that of the trout, and consequently does not present so good a hold for the hook, which without delicate handling, both in striking and playing, is apt to break away. The struggles of the grayling are sufficiently violent at first, but they do not usually remain so long, though a large one is not always so "dead hearted," to use the fisherman's term, as is commonly considered. The first struggles of the grayling should therefore be yielded to without restraining him, until it is found that the hold is sufficiently secure.

3919. *The flies for grayling* are commonly stated to be the same with those of trout, and the statement as a general rule is just; but there are some trout flies which are not relished by grayling. Our own observation also coincides with those authorities which state that the flies for them should be dressed smaller than those for trout. We should seldom in our own practice offer grayling of the ordinary sizes, which are from one pound to two, any fly larger than one on a No. 6. hook, which as a stretcher may be accompanied by a dropper or droppers of No. 7, 8, or 9. In the Hampshire streams and other waters, where these fish run larger, they will readily take the May-fly and stone-fly of the largest sizes, and also the larger moths. We, however, recommend the grayling fisher to dress even these purposely smaller, and in general to make use of small rather than of large flies, convinced as we are that they will best fill his basket. The favourite flies of the grayling are found among the *Ephemera* and the *Phryganea*, but principally the former, there being but few of the small duns that are not killing baits for them. Gnats and spider-flies, or tipular, they likewise take greedily, and the varieties of the house-fly are seldom refused.

3920. *In February* grayling have been killed with the representations of gnats, No. 1., and the early small black fly, No. 2.; but this can by no means be considered as part of the grayling fly-fishing season.

3921. *In March and April* the smaller grayling in open weather are sometimes disposed to rise to No. 1 or 2. The alder or red fly, No. 3., towards the end of March will be found effective in tempting such larger ones likewise as have left the deeps; and when this fails, we would recommend the angler to try No. 6. as a stretcher with Nos. 7 and 8, as the first and second droppers; the first dressed on a No. 8. hook, the other on a No. 9.; or, in a blustering day from a favourable point, use as stretcher and droppers, Nos. 4, 5, and 7. The gnat may be substituted occasionally for the upper dropper; but the stock flies in grayling fishing are the duns in all their varieties. In April the grannam appears, and is recommended by Sir Humphry Davy. We must not, however, place much dependence on the chance of sport at this early grayling season; for though towards the end of the month they will leave their haunts, and seek the shallower waters to prepare for their spawning, they will not be yet found much on the alert in quest of winged food.

3922. *In May and June* grayling fishing is interesting but not very productive, and it is seldom that a great quantity is taken; for May usually finds them rather sluggish, being near the time of spawning, or being weakened somewhat by having spawned; they may, however, be tempted in warm lowering weather by their favourite flies the duns, particularly by the lighter varieties, to which they will sometimes rise even freely. Sir Humphry says, that the dark alder-fly, imitated by a dark shaded pheasant's wing, with a black hackle

for legs, and peacock's harl ribbed with red silk for a body, is also well received by them at this time. He recommends as well both the red and black palmer-hackles, Nos. 9. and 11., which we cordially approve; but we beg to add to them the black caterpillar-fly, No. 34., as an excellent killer too. The May-flies and stone-fly are now on the waters; and their representations are successfully employed wherever the originals are bred, and there only. Of the green drake as a grayling-fly on the Dove, Cotton says, "He is taken at all hours during the season, whilst there is any day upon the sky; and with a made fly I once took, ten days after he was absolutely gone in a cloudy day, after a shower, and in a whistling wind, five and thirty very great trout and graylings, betwixt five and eight of the clock in the evening, and had no less than five or six flies, with three good hairs apiece, taken from me in spite of my heart, besides."

3923. *In July and August* most of the trout flies native to the rivers are readily taken by grayling also, and at the same times of the day, and under the same circumstances, as they are taken by trout. The spider-flies, the house-flies, the gnats, the ant-flies, and the duns, may likewise be enumerated. Sir Humphry Davy particularly praises the pale blue dun for August and September; and it is noticed in the same way by other writers; but it is not however, in our opinion, equal in killing qualities to the sand-fly, No. 35. We have in our own practice been very successful likewise in very hot days with the case winged orange-fly, No. 38., and in the evenings of such days after sunset we have killed fine grayling with both the white and brown moth, Nos. 39. and 41.; but it was our custom to dress them purposely on a No. 5. hook. In the Dove, within its rocky precincts, a small fly called a mackarel is successfully used in the summer months. It is formed from a grouse hackle and brown dun dubbing, on a No. 8 or 9. hook.

3924. *In September and October* the flies taken by trout are almost without exception equally acceptable to grayling also, the varieties of the dun however still proving the stock baits. As long also as the ant-flies remain, their representations will kill, and on some days more than others; but the late dark bodied willow-fly (No. 36.), the pale blue dun, and the red dun of the early months, prove still more regularly tempting. Of the former there are successional changes throughout October; and these with gnats, and small muscae, or house-flies, form the hopes of these late fishings. Towards the close of September the grayling begins to confine its fly risings to the middle of the day; yet throughout October and even in November it may, in the middle parts of fine days, be tempted with such ephemeral flies, gnats, and small black flies, as then appear. It is however none but the professed fly-fisher that will thus attack them at this period, as the gentle and worm under water is then by far the most killing practice. It remains to say, that with the exception of such peculiarities as have been noticed, the instructions and observations which follow relative to trout fishing are equally applicable to grayling.

SECT. IV. *Fly-fishing for Trout.*

3925. *This most interesting diversion* has been so often eulogised in our pages, that we shall not here offer another word on its pleasures, but confine ourselves to drawing into one general practical summary the substance of our former details, referring for information on the individual matters concerned to our index. We will suppose our pupil (with whom we have now spent many months, and whom we thank for accompanying us through so many pages, toilsome to us, and perhaps wearisome to him) to have arrived at the side of an excellent trout river, his landing net grounded, to give him time to thread his reel line through the smoothly polished rings of his justly tapered rod. And here we would recommend him, instead of looping his foot-length to his reel line after the usual manner, by which two folds, somewhat bulky, are necessarily interwoven with each other, to attach it by neatly whipping to the running line a length of gut, which should be as near to the size of the fine end of the reel line as possible. To this whipped piece of gut, we would advise that the foot-length be tied at each time of using by a water knot, which will totally prevent the inequality of action occasioned by the looping, which is most certainly detrimental to critical correctness in throwing or delivering of the line. It will be necessary that each end of gut be first softened to insure the security of the tie, which may be easily done by holding them a minute only in the mouth. Rather more than half an inch of gut only is lost from each end, which, when it has amounted to six inches from each, can be replenished by an interposed link, and the angler goes on again as before. This will be thought by some an unnecessary trouble; but we apprehend that if tried it will then be otherwise regarded: the usual looping, particularly when coarse, is apt to make a ripple on the water, unless the foot-length be very long: it also adds to the weight, and in gales catches in the wind.

3926. *The trout in a sporting point of view* is evidently more wary and cautious than the grayling, requiring the angler to be very circumspect, and as much concealed as possible. A pricked trout instead of again rising to the same fly, if he have once or twice refused it, and struck short, will seldom rise to another for a considerable time afterwards, sometimes for some hours, being either convinced of the deception, or becoming alarmed from having seen the angler. The smaller trout do not confine themselves to one situation, but move about in search of food; a larger one, on the contrary, confines himself principally to a particular spot, which he retains as a strong hold, and from whence he seldom moves in the daytime but in search of prey, making short circles in pursuit of minnows, &c. A situation favourable to the observation of the passing flies also is usually chosen by the trout, such as the tail of a weed-bed, the turn of an eddy, or wherever the floating insects meet with a momentary check. Here he frequently elevates himself in the stream, so as to be but just concealed, and from thence he takes such as sail over him, and this he often does in a very quiet manner, so that were it not for the large circle made in the water it might pass unperceived. This quiet manner is particularly observable in the evening, and in his roving in very gloomy hot days; occasional circumstances may interfere with this, but such is the general mode of rising with a large trout, particularly when intent on feeding on any of the ephemeral or caddis-flies. It however frequently happens that disappointment awaits the angler on these occasions, for in a very warm bright day, large chub, or even large roach, will congregate in a shady pool, and take insect after insect somewhat

in the same way. We say somewhat, because the risings are not effected altogether in the same manner; and the experienced fisher will readily distinguish between them. In the first place the situation chosen by these white fish is usually towards the middle of a still pool; but the trout, although he may hold his haunt in a deep, or near a pool, will usually choose such a one as is within the vortex of an eddy or small whirlpool, which constantly curls the water, and brings before him the insects passing downwards, so that he is under no necessity to quit the spot. Large chub and roach, on the contrary, generally move from place to place, rising now in one spot, and the next time two or three feet in another direction, for they are more on the look-out for such non-aquatics as may fall from the banks or surrounding boughs, as caterpillars, beetles, bees, and the varieties of the *Muscidæ*, &c., than for the ephemera or phryganea. Another distinguishing mark between the risings of these and those of either trout or grayling is, that they are often accompanied with bubbles thrown out from their air-bladder during the effort of seizure, or preparatory to it. A trout rise gives also the idea of muscular strength.

3927. *When trout have fully recovered their strength after spawning*, they will often be found, to appearance, to approach the centre of powerful currents; but we believe that in such cases they are not often found in the extreme rapid, but to lie below it rather, and that in such case the full force of the stream flows over them. Such a situation is favourable to the angler, as he is not so easily distinguished, nor are the defects of his bait so soon discovered; but a trout thus situated is more likely to strike at a minnow than to rise at a fly, and he is in general at this time more intent on the former than on the latter kind of food. It is otherwise when a trout occupies the tail of a current; such a one seldom refuses the proper fly of the day, but it should be shown to him coming out of the current itself. The trout delight in every bold secluded situation, whether it be between the piles and piers of bridges, or among the broken rocky masses of precipitous waters; behind a large stone, or under the projecting portions of fallen rocks which divide the streams, or under the shelter of banks and hollows worn by currents in softer soils.

3928. *When a trout has risen more than once to a fly*, and refused it, the angler may rest assured there is something about it which he does not like; it is either not the *very fly on the water*, or it is otherwise a bad imitation of it; and this must be remedied either by a more just representation, or by some other more alluring variety, to insure success. Trout are likewise frequently observed to rise as though in sport, for they either take nothing, or if they do, the matter taken is so minute as to escape notice. It is probable in many such instances that they actually rise in play only, as they throw themselves out of the water, which is not common with them when rising to seize a fly, unless such fly be just taking wing: we would therefore caution the young angler against wasting his time in offering any baits whatever on such occasions, unless he be disposed to endeavour to flog the refractory fish into a more taking mood, which he will probably find a difficult task. This sportive humour sometimes comes on in the middle of a bright day, and in the evening of such as have been cloudy and become bright at sunset; but we do not recollect to have observed it in the morning.

3929. *On the occasional playfulness of fish* we have to remark, that such a propensity does really occur, and in such cases they will be seen to rise in all directions at flies that swarm on the water, especially during the evenings following sultry noons. When such is the case, the angler can scarcely mistake; but he will find the fishes so glutted in a short time, that they will discontinue to rise, or at least will be so indifferent, as to render it difficult to attract them. In the early part of the evening, at that hour when the fishes are keen, after a day's abstinence, and the flies just beginning to appear, the best effects may be produced by proper selection of the flies to be used. But there are times when the fishes are every where rising, yet not one will touch a bait of any kind. Many circumstances occasion this; but generally it is owing to the water being so much warmed as to become uncomfortable to the fishes; they then plunge into the air, which being cooler than the water, or at least refreshing from its action on the wet surface of the fishes, proves particularly acceptable, operating with them, no doubt, much the same as the cold bath at the same season does upon the human frame. The great point to be attended to is, that when fish rise to a fly, they come forth with rapidity, rarely putting more than their noses out of the water; indeed, they often do no more than give a sharp whirl on the water, perhaps scarcely reaching the surface, though it appears agitated. On the other hand, when a fish rises for recreation, he comes up more deliberately, makes a greater splash, generally throwing all or the greater part of his body out, and descending head foremost in a temperate manner. When a fish leaps far out, he generally comes down on his side, and makes a large break in the water as he falls into it. We have observed that such "are not to be had on any terms."

3930. *Avoid throwing directly into the circle made by a trout that is rising*, but do it higher up and a little beyond it also, by which the fly, when properly humoured by the hand, will just commence *showing* itself as it reaches the trout's view. The distance which it will be right to throw before the circle last made, will depend on the nature of the current: if it be very rapid, throw two yards above and half a one beyond; if gentle, make the cast one yard above and six inches beyond. In lakes and other still waters, however, this caution is not applicable, and the thrower is warranted in making his cast near the last circle; but this, it must be observed, does not always succeed either, for in lakes and large trout ponds, the rising trout do not remain stationary as in currents, but wheel about in circles. When angling in a river whose opposite bank can be reached, throw the fly directly on the edge of the bank, or against its sides; it then falls so naturally, as frequently to entice a fish at the first throw.

3931. *On the rising of trout*, Bainbridge has an excellent practical observation, worthy the young angler's notice:—"When a trout is observed to rise of his own accord, the flies must not be thrown directly over him, but about a yard higher in the stream, so that they may float down to his view, without the fear of agitating the water; and if upon hooking a fish he be observed to leap frequently out of the water, it will

require the utmost care of the angler to secure him, as he may calculate upon the barb being only slightly fixed." It might we think have been added, that even more probably it may be fixed in some other part than the mouth, in angling language called *hooked foul*. But if, on the other hand, he remain below the water, and struggle at the bottom, there need be little fear of his escaping, as the hook will be found to be firmly and mouth-fastened. "When angling for trout, and it is known that salmon frequent the streams, it is necessary to use stronger tackle than might otherwise be advisable. An instance of the utility of this precaution occurred to the author:—In one morning's fishing, five salmon rose at his trout flies; two of them he succeeded in taking; the largest weighed sixteen pounds and three-quarters, and measured two feet nine inches in length. It is true the gut of which the line was composed was choice, but it was single, and not of that description which, from its extreme thickness, is called salmon gut. The time occupied in playing this fish was about an hour and three-quarters; and never did a general derive greater satisfaction from a victory than was felt on that occasion."—*Fly-fisher's Guide*, p. 70.

3932. *The trout fly-fishing season* depends much on the circumstances of locality, temperature of the atmosphere, &c. &c. In the Usk and Driffild the trout are forwarder by a fortnight than they are in other rivers of the same counties, though not far distant. A warm and early season, by producing a more speedy evolution of the insects congenial to them, hastens their return to condition and strength. This *condition of trout* is known by their appearance, and the relative proportions between the weight and linear measurement, as the subject of it is in or out of condition. These circumstances are important to the angler, as it is little to his credit to take any fish in an unseasonable state, and still less so to send such as presents to his friends. Our chapter on angling travel will give some information as to the waters which are known to be favourable to early condition in the salmon, trout, and grayling contained in them.

3933. *Of the fly-baits*, their description, and the times and seasons when they are to be brought into use, we have very fully treated in our monthly lists; and it now only remains to recommend to the angler, as a matter of utility and instruction as well as of interesting future reference, that he keep a ruled table of sport after the following method, which it will be found is framed only for grayling, trout, and salmon, but which, by additional lines, may be made to embrace other occasional varieties also:—

Table Diary of Sport for 1858.

Time.	Wind.	Weather.	Water.	Flies.	Grayling.	Trout.	Salmon.
May 10.	S.W.	Mild.	A fresh.	2, 4, 5, 3.	4	7 ½-pounders	1 missed.
12.	N.W.	Cold.	Bright.	4, 2, 1.	3 of 1 lb.	9	
16.	Southerly.	Stormy.	Low.		&c.	20	
	&c.	Genial.	Muddy.			&c.	
		&c.	Snow water.				
			&c.				

SECT. V. Of Natural Fly-fishing.

3934. *This method of taking fish* is occasionally called whipping, but more often dipping, daping, dibbing, and, in some of the older works, bobbing at the bush (*fig. 561*). Whipping



DIPPING FOR TROUT AND GRAYLING.

as a term can only be applicable by any licence of language to the act of whipping out a natural fly, after the manner of a short throw, with an artificial one; but it is evident that the tender nature of the living insect will admit of this but in a few instances. Some of the house-flies, the blue-bottle especially, and others of the middling sized beetles, as well as the humble bees, will bear a partial or short throw, but a short one only. Practice will convince the angler that large natural baits cannot be thrown to any distance with advantage; the fact is, that they are far more appropriate to situations close under the bank, where the large fishes frequently lie, especially in ponds, waiting for what the wind may tender to them. When, however, there is a very strong wind at the back, the natural fly may be carried out to a very considerable extent; but it must be by the act of the wind itself, and then the practice proves very successful: at other times the angler must be content to fish with as much line as he can command by his situation, without tearing his fly from his hook. With a strong wind, the angler should keep his rod steady in one position, taking the wind rather slantingly behind, and allowing the breeze itself to carry the line, he should watch a momentary lull in the gale, when by lowering his hand he may drop the fly on the surface as gently and as naturally as possible,

3935. *Dipping when skilfully conducted is a most killing practice*; and where quantity is wanted, it is well suited to the purpose. It was never a favourite method with us, and the only times we could bring ourselves to give up the use of the artificial fly for the natural, was when the weather had been too bright, and the waters too low and clear to give much chance to the former, or when the deep still pools contained all the fish driven thither for want of water. We have at such times occasionally practised it, and have been much interested in observing how the fish, particularly chub and dace, have clustered round in expectation of the fly which hung over them; and not unfrequently we have witnessed their leaping out of the water to insure it: but this eagerness is only to be observed when the angler's person is completely out of sight; for in this kind of fishing, quietness and concealment are indispensable requisites, which has occasioned this method to be called by some anglers *bush* or *shade fishing*, from their practising it under the concealment of shade afforded by bushes, as *bobbing* is also derived from the short line which is made use of at these times. This predatory mode is described so truly with the energy of a real pot-fisher by the *North Country Angler*, that we cannot refrain from presenting his account, which one might suppose had been borrowed from the bush warfare of the American Indians. "I generally begin fishing in the shade or under bushes in May, and continue it all the three following months, which we call the four hot months: most anglers in those months fish only in the mornings and evenings, unless the sky is cloudy and there is a brisk wind on the pools; for then one may have very good sport, and kill large fish. In these months, when there is no wind and the sun is shining, from about ten o'clock in the morning till four or five in the afternoon is the best time for shade fishing." The rod and line are then described by our author; but that subject we venture to take on ourselves.

3936. *A long and firm rod* of twelve, thirteen, or fourteen feet, with a very stiff top, is necessary for the purpose; the length to be suited to the situation: if it be a very close and confined one, eleven or twelve feet is sufficient; but we rather recommend that the rod be of the general length, and that the reel, instead of being attached to the butt, be fastened on the second joint, when by taking off the butt-end the rod can be shortened as occasion suits. A reel is not thought requisite by the author just quoted; but it is evident that in no fishing is it more wanted than in this, where it is required to lengthen and shorten the line according to circumstances; as for instance, where, from a length of seven or eight yards, it must be reduced to one, or even less, and sometimes even to be wound up altogether, that it may be insinuated through trees and bushes; and in such cases how can it be so well done as by a reel? The line therefore should be nothing more than the reel line with a foot-length of gut, strong upwards and fine below; and that it may be at the same time fine and strong, observe that the links be perfectly round and free from flaw. The length of this foot-length need not be more than three or four feet, and thus when it is neatly whipped to the reel line, instead of wrapping it loosely round the rod, as directed by the *North Country Angler*, it may be drawn up by the reel altogether; but we will let him describe his own method, and then the learner may choose for himself.

3937. "*Your line should not be above a yard long*; and where there is some difficulty in getting your rod-top through the bushes not above half a yard, which, when baited, you may wrap loosely seven or eight times about the rod-top, and when you have thrust it beyond the bush, turn your rod round as many times, and let your bait drop into the water. There is a great deal of caution necessary in managing your rod and line. Some pools are shaded only here and there with a bush or two; in such places you may fish with a line a yard or more long; but you must be sure to make your approach to such open places cautiously, for the great fish lie very near the top of the water watching the fall of flies or other insects from the bushes, where they are bred or harboured; and though you do not see them, yet they will see you at your first coming and scud away into the pool, and not return perhaps in an hour's time. I have been often agreeably amused sitting behind a bush that has hung over the water two yards or more, and observing the trout taking their rounds, and patrolling in order according to their quality. Sometimes I have seen three or four private men coming up together under the shade, and presently an officer, or man of quality, twice as big, comes from his country seat, under a bank or great stone, and rushes among them as furiously as I once saw a young justice of the peace do to three poor anglers; and as I cannot approve of such proceedings, I have, with some extraordinary pleasure, revenged the weaker upon the stronger by dropping in my bait half a yard before him: with what an air of authority and grandeur have I seen the qualified—what shall I call him? extend his jaws and take in the delicious morsel, and then marching slowly off in quest of more, till stopped by a smart stroke which I have given him, though there is no occasion to do so in this way of fishing, for the great ones always hook themselves."

3938. *When a fish is struck*, our author also judiciously recommends "never to let his fish get down his head, unless he, the angler, is sure there are no roots near enough for the fish to retire amongst; but to keep him at the top of the water, where his fins and strength are of little service to him; and besides, he may thrust out his rod so as to reach beyond the bush, and there work him till he is quite tired and lies still." An observation

of this angler is worth recording, which is, that "Although the shade of trees and bushes are much longer and greater on the south or sunny side of the river than on the north, yet I always found the most and the largest trout on that side. I suppose the sun's being more intense and warm on the north side may occasion more flies, erucas and insects, to creep upon those bushes, and consequently the more fish will frequent them. Where the trees or bushes are very close, I advise the bush angler to take a bedging-bill or hatchet, or in want of that his sporting knife, and cut off two or three branches here and there, at proper places and distances, and so make little convenient openings, at which he may put in his rod and line; but this is to be done some time before you come to fish there. If you come to a woody place, where you have no such conveniences, and where, perhaps, there is a long pool, and no angling with the fly, or throwing the rod, there you may be sure of many and large fish. For that very reason I have chosen such places, though very troublesome, where I have been forced to creep under trees and bushes, dragging my rod after me, with the very top of it in my hand, to get near the water; and I have been well paid for all my trouble. Whilst you are getting in your rod throw a brandling or grub, or what you fish with, into the place, which will make the fish take your bait the more boldly."

3939. *Dipping* is however not always to be practised behind the friendly shade of bushes or trees; but on the contrary, the angler is often forced to content himself with the bank he stands on, to which he should creep on his hands and knees. In some cases, it is true, he may procure the shelter of a hurdle interwoven with boughs, or he may adopt some similar artifice; but many cases must occur, where he can trust to concealment only by prostration, or stooping low. In such situations Mr. Salter directs, that "as much line be drawn out as will just let the baited hook reach the surface of the water; then, with the top of the rod a little raised, keep the bait in motion just over and upon the surface, by gently raising and lowering the top part of the rod, and drawing it to and fro; and if you see several fish, cautiously guide your bait to the largest; play it a little, an inch or two above the water, by gently shaking the rod; then let it drop just before the fish."

3940. *When a fish has well taken the bait strike smartly*, and to prevent its floundering from scaring away the remainder, it is advisable, if the tackle will allow of it, that the fish be immediately drawn away, or even lifted out. If the angler be on the top of a high bank, or if his fish be very large, this cannot be done; but he must content himself with guiding it with his rod and line to some distance, and then landing it; which done, he had better try another spot, until the disturbed fish be again reassured. The insect baits used in natural fly-fishing have been individually considered, and their angling uses pointed out in the entomology of angling (p. 1003.), to which we would refer for much other matter connected with the subject.

3941. *Dipping for dace* may be practised with a long fine rod from fourteen to fifteen feet long, with a very fine gut, or rather hair line, a little longer than the rod. Commence with the house and flesh-flies, by using for each a very small hook, as No. 9, 10, or 11., which should be entered in the back between the wings. Three flies, on three hooks, may be used at once, one after the manner of a stretcher on a No. 7. hook, and two others as droppers on hooks, No. 8 or 9. During a cloudy day, or on a summer's evening, in broad scowers of rivers, or in mill-tails, at such parts where the water begins to flow smooth, excellent sport may be had. Either of the small ant-flies, black or red, will likewise raise them, particularly in the early part of the day. *Dipping for dace* is practised throughout the kingdom. The metropolitans pursue it on various scowers of the Thames, at Kew, Richmond, Hampton, Laleham, and Windsor. In the Lea also it is common in many parts of its course, and in the Colne, the Mole, the Wey, &c. &c. In other large rivers, as the Trent, Severn, and Wye, we have taken them in profusion, both by whipping with the artificial, and dipping with the natural fly. It is a little remarkable that dace invariably prefer the dipterous to any other of the insect tribes: in calm weather they contend for the house and flesh-flies; in windy weather they will take the cowering greedily; while a pair of artificial wings, on a No. 9. hook, with a living gentle for a body, proves to them a killing mode, by either whipping or dipping, morning, noon, or night, and as well in still as in stream.

3942. *Dipping for chub* is a very favourite sport with some anglers, being one of the most killing methods, and by no means an uninteresting one, for this fish is at once wary and yet voracious. A general view of the habits of the chub appears in our chapter on bottom fishing (p. 1054.), where also the dipping baits and the methods of using them are glanced at. *Dipping* is altogether a summer sport, and is particularly successful in the dawn and evenings of sultry days; but in cloudy weather it may be practised all day long; and under sheltering bushes overhanging an extensive pool, it is not unusual to get an occasional hour or two of admirable sport even in the brightest day, but the morning and evening must be considered as the principal times for the exercise of this method of luring them. Chub inhabit ponds, expansive still waters, and rapid rivers also; but dipping for them answers best in the more retired and deep parts of every water whatever. It is thus that in the pools formed by currents, and bends in our large rivers, as the Thames, Wye, Severn, Trent, &c. &c. this sport is common, and is variously pursued according to circumstances, from the oracle fisher of the Wye to the adept crawling on all fours amid the high grass which skirts the Thames and the Lea banks. The natural fly baits for chub have already been considered in our chapter on bottom angling, and in the entomology of angling likewise, where the value of the humble bee, and the methods of using it as a bait, may be seen, as well as of other of the insect baits adapted to this kind of fishing.

3943. *Beetles, and all the case-winged tribes*, without exception, are great favourites of the chub, which cluster together under bushes waiting their fall, or watch the edges of banks to receive them as they roll down their sides. Among these, cockchafers have always been considered among their delicacies; these, it is usually recommended to the angler to deprive of their elytra, or wing-cases, before he uses them. But as we know of no method by which these insects get husked or peeled in a state of nature, and in this state we know the fish readily receive them, so we are at a loss to account for the necessity of such mutilation. Beetles, as baits, are carefully hung on a hook, No. 4 or 5., with the belly towards the back of the shank, and the barb hidden under the wings close to the back. Small beetles will allow of two being put on a hook at once. "I have experienced," says Captain Williamson, "that two flies put on the same hook, in such manner as to imitate their junction, at particular seasons, is extremely alluring: this is done by threading the upper fly entirely through its whole length, inserting the hook at its forehead, and bringing it out at its other end. Slip it up on the shank, and let the point enter the second fly at the heart, leaving the lower end unpierced, so that the hook may be completely concealed. Your tackle must be very fine." The wasp-fly (*Allantus*) is also an excellent chub bait; so is the large and hairy fly described among the *Muscideæ*. The larger *Tipulæ*, or gaffer-long-legs, are likewise excellent dipping baits. Caterpillars of all kinds, large hairy ones particularly, are good baits. These and other insects used should be collected and kept for the dipper's purpose, as directed among insect baits.

3944. *Grasshoppers* form one of the best dipping baits for chub; and the method of using them is so admirably described by Walton, that although the matter presents no novelty, his manner of telling it will ever remain unique:—"Go to the same hole," the Mentor says,

to his Telemachus, "in which I caught my chub, where in most hot days you will find a dozen or twenty chevins floating near the top of the water; get two or three grasshoppers as you go over the meadow, and get secretly behind the tree, and stand as free from motion as is possible; then put a grasshopper on your hook, and let your hook hang a quarter of a yard short of the water, to which end you must rest your rod on some bough of the tree; but it is likely the chubs will sink down towards the bottom of the water at the first shadow of your rod, for a chub is the fearfulest of fishes, and will do so if but a bird flies over him, and makes the least shadow on the water; but they will presently rise up to the top again, and there lie soaring till some shadow affrights them again. I say, when they lie upon the top of the water, look out the best chub, which you, setting yourself in a fit place, may very easily see, and move your rod as softly as a snail moves to that chub you intend to catch; let your bait fall gently upon the water three or four inches before him, and he will infallibly take the bait, and you will be as sure to catch him; for he is one of the leathern mouthed fishes, of which a hook scarce ever loses its hold; and therefore give him enough play before you offer to take him out of the water."

3945. *It has been our practice*, however, to drop the grasshopper on some leaf under which we have heard the chub *smacking*. From the edge of the leaf we have allowed the grasshopper to roll into the water, where it was usually at once taken by some chub at hand. The black slug is mentioned by all anglers from the time of Walton, and on his authority by many who have never tried it. We have used and taken chub with it, but that is all we can say, for we think any other bait preferable. It will serve to vary the practice however, and is to be offered to the fish by cutting it open and exposing the inside, which is white; it is then to be shown to the fish by sinking and drawing.

3946. *The stone-fly*, the green and grey drakes or May-flies, and the moth-like *Phryganeæ*, are admirable dipping baits; and on the expectation of these insects is founded the angler's certainty of meeting with chub wherever willow, alder, and pollard trees skirt the water, under which the fish sail round and round in the evening, or bask during the heats of the day, in readiness to receive all that fall from them on the water.

3947. *Chub may likewise be dipped* for during the whole of warm summer nights when the larger moths are abroad. If the moon shine, the light will be sufficient for the purpose; and if the sky be unclouded, the twilight alone will show two varieties out of three: but on a very sultry, close, and lowering night, a dark lantern may be successfully used, by having its transparent side directed to the part where the moth is played by the angler. We have known this kind of fishing very killing, and even to the largest fish; but the angler must rove with his moth, moving gently about, and casting near and afar: every now and then he ought to remain still, and listen to the rising of the chub in other spots, to which he may immediately turn his attention. Should a more than ordinary disturbance be heard, it probably arises from a large trout or grayling, who will dart in the night often half out of the water after the moth, as it flutters over the surface, or rests on some aquatic plant. A jack may be heard occasionally throwing himself headlong after the minnows that line the shallows, or otherwise ingulphing in his jaws some amorous Leander of a frog, who is cleaving with lusty strokes his tiny Hellespont to visit his croaking mistress!

SUBJECT. 1. *Dipping for Trout and Grayling.*

3948. *To trout and grayling* may be applied what we have already said on this method as regards chub. Both trout and grayling are by some persons dipped for at almost all times and all seasons, either with winged insects or with their larvæ; but the principal dipping time for both is when the stone-fly and May-flies are on the water. Use a hook, No. 6 or 7. for trout, and No. 7 or 8. for grayling; but when both are in the same water, choose the smaller sizes for the general sport; as a small hook, in a good hand, will hold a large trout, and a large one is often refused by a grayling. "To bait with either a stone-fly, or a green or gray drake, put two or three on the hook together, which should be carried through the thick part of the fly's body under the wings, with their heads standing different ways; pass your hook through them under the wings, about the middle of the insect's body, and take care that your fingers are always dry when baiting, or you soon kill or spoil your bait." As the season advances, beetles, bees, and large flies of all kinds, may be used with effect. In the evenings and mornings try the *Tipula* or long-legs; and during the night the moths in all their varieties will often prove killing. The fly-minnow is sometimes successful, when trailed, dipped, or cast on the surface of the stream, and proves occasionally so on the still waters and deeps. But in these a gorge minnow is deadliest.

3949. *In reference to these fish, Walton's method ought to be good*, for it has been recommended for more than a century and a half, and quoted by almost a hundred of writers: it certainly also will kill in our days as well as it did in his. "Make a pair of wings of the feather of a landrail, and on the bend of the hook put one or two caddies; the head of the caddis should be kept close to the wings. Angle with a rod about five yards long, the line three, and the hook, No. 2 or 3. Let the bait float down the stream just below the surface, then gently draw it up again a little irregularly by shaking the rod, and if there be a fish in the place, it will be sure to take it. If you use two caddies with the wings, put the hook in at the head and out at the neck of the first, and quite through the other from head to tail. Two brandlings, or small red worms, may be fished with in the same way. Before you send trout on a journey, always have them cleaned and gutted, and let them be laid on their backs, and closely packed in a willow basket with dry straw. Packing in damp grass or rushes is apt to ferment, and therefore liable to spoil the fish." Captain Williamson is warm in his praise of this method of fishing for both trout and grayling, and recommends the angler to provide himself with natural flies and grubs in all their varieties. They may be obtained in the fields, on hedges, and among the garden esculents; among turnips also, and among rape and clover. When any such bait is placed on your hook, shorten your line, and crouching your person, pass your bait, line, and rod, very carefully through the bushes: nor is it always necessary that you actually see the water or the fish; it is enough that you gently feel you have daped or dipped the water therewith: and the ready fish will soon cause a vibration on your wrist which you cannot fail to understand. Nevertheless, be equally cautious even now, and avoid landing your fish on this very spot, but rather lead it some little way off, so that the general mass or congregated body may not be put on their guard by an open display of your manoeuvres. Should you find that the soft nature of your baits interferes with your showing them favourably to the fish, dress your hook, which may be No. 3, 4, or 5., with a pair of artificial wings from a red cock's hackle, or even peacock's harl. A strip of fine, light yellow wash leather, wound up from the bend of the hook to the wings, will form a body not unlike a gentle.

SECT. VI. *Fly-fishing for Salmon.*

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FLY-FISHING FOR SALMON.

3950. *Salmon fishing has been called the sport of sports*, and to be an expert salmon fisher is yet the feather of distinction in the cap of the accomplished angler. Throwing the fly so effectively as to bring any of the finny tribes to hand, bespeaks dexterity; but to strike, play, and land a lively salmon of fifteen pounds, in an artist-like manner, claims honours for the best piscatory professor. It is true that in by-gone days, when these fish were more abundant, it was more common to take them much heavier with the fly. We ourselves assisted in the gaffing of one of twenty-five pounds and a quarter, taken in the Boyne, about five miles above Drogheda, with a gaudy and coarsely made fly. As the banks were high and steep, the landing the fish was attended with difficulty, but after one or two efforts to fix the gaff it was accomplished, and the prize secured. Being much pleased with the occurrence, we agreed on the spot to purchase it as a present to the regiment we then belonged to, the North Gloucester Militia. Such as remain will recollect the occurrence, as well as the admiration of the visitors at the beauty and the excellence of the fish. We afterwards met at Brecon with two resident fishermen, who had each in his time taken a salmon of equal, and we believe of rather greater weight than this. Under such considerations, we cannot wonder that the older anglers of the present day are heard lamenting both the diminished size and greater scarcity of the salmon now taken by rod and line, as well as the greater difficulty of gaining access to them. Nevertheless there still are salmon to be met with in moderate plenty; nor will any gentleman, with a proper recommendation, find trouble in obtaining permission to exercise his abilities in this way. In the remote parts of Scotland, Ireland, and Wales, there are some open waters, which we shall notice as we proceed, where any one may exercise his art without molestation. Indeed, it is well for the angler that it is so, for there are attractions in fly-fishing generally, but in salmon fly-fishing particularly, that render its pursuit irresistible to many. It is ennobled by its high bearing, and even the difficulties which surround its general and uninterrupted enjoyment, serve but to enhance its value. The *anglemania* here is not the *paradise of fools*. Is it nothing that the sport we advocate is so frequently enjoyed at the foot of a romantic fall, from the bottom of which, ever and anon, the restless salmon makes his leaps from one point to another, in order that when the whole are surmounted, a spawning ground may be obtained? Is it nothing to watch in the pellucid stream below, for the occasional shoot of the silver-sided fish, darting forward to gain the acclivities above, while large and small trout dash here and there in such abundance, that we are in a maze to determine whence the shoals of small fish we see can spring, knowing, as we do, that both the trout and salmon are their devourers. On this and many other subjects that present themselves in these romantic scenes, the contemplative angler may indulge in speculation and deep thought; while the more ardent one may plunge at once *waist deep* into the practice of his art. We will watch him. See, he threw the fly with a masterly hand, and he raised a fish, but he *struck* rather short. Again another; and now, indeed, he has *struck* his prey, which, to all appearance, is a heavy fish. Steady, piscator! keep a tight line to prevent your fish from getting round a rock, cutting your line, or tearing the hook out of his mouth! On the other hand, be equally mindful that the line be not over tightened, or it may snap asunder, and occasion the total loss of the fish! It is well; "you have tired your fish:" now let your friend, with equal dexterity, do his part, which is to watch his opportunity of gaffing him, if large; if not, by insinuating the landing-net under him, so that he may, as it were, rather *drop* into it by accident, than by design or force.

3951. *As some "intelligent" writer advises, we will however begin our discourse from the beginning.* The salmon rod should be of two kinds, one very strong for taking salmon in large lochs, or in such rivers as are known to be resorted to by the larger fish, and from seventeen to eighteen feet long. It will be sufficient if the other is sixteen feet in length, their strength being also proportionate. A due proportion of the very best reel line, from fifty, sixty, and even seventy yards in length, should in some waters be at hand ready to be let out from a *plain* reel of sufficient circumference, substance, and freedom of play. In this angling, when a heavy fish has been hooked, and probably in as heavy a water also, a multiplying reel would not act, but would rather distract the process by its inefficiency. Where weighty fish are expected, not only employ what may be called by the maker a strong rod, but let the joints next the hand be of extra strength, to bear the exertions of a large fish. The flies used for salmon in every locality require to be considerable in size, and very showy likewise, except in Wales, where rather more sombre colours avail best. An accredited salmon fisher tells us that in Wales the wasp and hornet flies are killing baits, but of course they must be dressed of sufficient *size*. He also mentions in favourable terms for this locality the dragon-flies, which we need not remark must be dressed of sufficient *length*. The Welsh fishers do not dress any of their flies with a superabundance of wing-feather; and Mr. Lascelles says of these flies, as "they have very long bodies, it is frequently better to extend the silk to the upper part of the hook, to make them appear longer than it would otherwise admit. The wings of all should not have too much feather in them, and those of most of them should be of various colours; as for instance, a few fibres of the most close and fine feathers of the cock pheasant's tail; a little blue, purple, yellow, or gaudy colours of foreign birds, and some fibres of the grey feathers of a mallard. In order that the wings may lie flat on the back of the fly when drawn through the water, you should not, in the making, extend them too far apart. The hackles for the legs should be black, red, or dun, or those that are red and black at the root; but the preference is generally given to the feathers from the saddle of the cock, because the fibres are stiffer, and the feather longer, which will enable you to make the body to any fulness you may desire." Even the Welsh salmon, however, are not inapt on occasions to take gaudy flies. At the latter end of the season, when salmon make up the rivers for spawning, the wasp or hornet is then a capital fly. The wings are made from the fine fibres of the cock pheasant's tail; the body of yellow worsted, dyed fine wool, or floss silk ribbed with black and made full, and a large red cock's hackle or saddle feather, black at the roots, wrapped several times under the butt of the wings for legs. This method of making salmon flies is pursued in North Wales, particularly in the Dee, the favourite river in that part of the country. Has its fine gravelly bed any influence in making this fly so killing in this river? This kind of bottom renders the fishing here so great a luxury: but how different the Wye, a river much more rapid and rocky, where you are obliged to wade very far before you can arrive at the best streams; and in doing this you should, if a stranger, be extremely cautious; for one unlucky step might not only plunge you into a profound, but irremediable depth. A salmon sometimes, but not always, runs out much of your line, most commonly when he is struck hard; at times he will lie like a log, dull and stupid, and no prudent effort on your part can determine him to show sport. You must, however, strive to effect this by casting stones to the further side of him, being careful not to let them fall too near, and only endeavouring to move him by disturbing the water; for, should you suddenly alarm him, he may, by an instant jerk, break your tackle into pieces. The deepest and most rapid streams are the best spots in which to try for a salmon; and the more powerful the fish you may be lucky enough to hook, the greater will be your difficulty in killing him; one taken with a fly in Scotland weighed fifty-four pounds and a half, but heavier than this are on record. In South Wales, we will also take this opportunity of observing, some Welsh anglers make use of the bittern's hackle to dress the wings of their salmon flies: according to the account of some tourists, it succeeds well with them, and we also can vouch for the truth of this observation.

3952. *Salmon are less variable in their location than trout.* In some rivers they locate themselves in sandy beds of estuaries, lying one or two more together, up and down the stream. The leisterer, aware of this, searches them out by torch light (p. 957.) and spears them: this is therefore not the best salmon ground for the fly-fisher; not but that when we have a boat launched, and under the stimulating effects of a mild ripple, the fly dexterously thrown has raised and hooked a heavy fish. In such case, unless your tackle be very strong, be not rash in your endeavours to raise him up; in no case slacken your line, or he may turn short round, and with one stroke of his tail free himself from all restraint. Salmon are concealed frequently in deep gutters worn by the eddy which is forced by a rapid descent; indeed, they shelter themselves thus often; or perhaps it might be equally just to say, they ambush under banks, projecting rocks, &c. to shoot out on the unwary prey which may pass. A large salmon when hooked is more frequently inclined to go down the river; his rush will in all likelihood be very violent: be it so; keep your line moderately tight, and only moderately, for a reason already specified. We remember well to have seen a gentleman, but unknown to us, who, although he seemed to handle his tackle well, and indeed threw a beautiful line, as it is called, yet with single gut he struck, and was playing a very heavy fish, without having either landing net or gaff-hook. We saw that an hour or two would be spent ere he could be landed without some assistance and much maneuvering. We enjoined him to be patient, in which he acquiesced, and suffered the fish to sulkily settle himself in the bed of the river, without disturbance, for ten minutes, as though sulking with his sore mouth, and his incapability of swallowing his prey. A few shakes of the line rather roused him, but it was not until some heavy stones were thrown towards his bed, that he again got him afloat: the captor handled him with much judgment, keeping the line stretched on him, but not sufficiently to allow even his floundering to disengage it. It was now that the fisher saw in full force his negligence, in having come out

without either gaff or landing net; indeed, the landing net could hardly answer his purpose, so much did the banks hang over the water; but after many efforts, our gaff was fastened into his shoulders, and by its means he was, with our assistance, added to that of the angler, safely landed on shore, and a finer fish was never seen: having no means of weighing him but our judgment, we booked him at eighteen pounds.

3953. *Some difference of opinion* exists with regard to the method of throwing the fly in salmon fishing, although some consider that the instructions given for trout angling with the fly will fully apply to salmon fishing also. But be it observed, the fishes are not the same; their habits, their locations, and their food also differ. To deliver a stout salmon fly to such a distance as is frequently necessary, is a very different action to that of offering a trout fly in the true English trout streams. The salmon fisher must begin with a short line, and if without any fly attached, so much the better. The throw must be made not exactly as in trout fishing; but although the effect intended is the same, yet the relative forces employed, and the resistances met with are not the same, no jerkings are allowed: bring the rod with both hands over the shoulder, delivering at the same time the line, and with a forward cast of the arms; for while the line circles behind you is the exact time to let loose the fly. A little practice will insure its soft descent on the water, whereby no cracking of line or snapping off of the fly will occur, although to insure the safety of a full hooked and full dressed salmon fly without snapping off, will require much caution and tact.

3954. *When your salmon is hooked*, by no means touch the line until he is banked; then draw him onwards, but do not touch the line: the best fish are often lost by this inadvertence. If possible, direct his head down the stream, which will exhaust him much sooner than would be done were his head directed up it, as is evident from obvious reasons. The more rapidly therefore that you can hurry him down the stream, the sooner you will expend his strength, and free yourself from the grand danger of landing him, if a heavy fish, while he is yet strong.

SUBSECT. 1. *Worm-fishing for Salmon.*

3955. *Worm-fishing for salmon* is so popular a sport in Scotland, that we must not pass it over: indeed, some very crack Scotch anglers will never use any bait but worms for salmon fishing; nor any thing but salmon's roe in the taking of trout. We need not inform any but the tyro, that worm trolling is practised to most advantage after what is called a fresh; that is, when rain has fallen, and disturbed the waters, at which times worm-fishing often proves very successful. The best worm anglers however make a very considerable distinction between a heavy flow of water and a light fresh. When the water is heavy and discoloured, two lob-worms are often used with success; but even the voracious salmon would be likely to refuse them when the water was clearing, at which time well scoured brandlings would be more likely to attract attention. This difference should therefore be borne in mind, and when the water is in a state between these two extremes, let both varieties be tried. Wading is with difficulty avoided when worm-fishing is practised; but unless the angler knows every part of the river extremely well, he may be plunged into a depth from which he cannot possibly extricate himself. In using the brandling when the water is only slightly discoloured, the angler is not so much obstructed in his vision, but that then with a piked shod staff he can step out, sound his depth, and cast his brandling hither and thither with ease, and frequently with much success. Three or four brandlings or dew-worms of moderate size are not too many on the hook at the same time for salmon-fishing. When a salmon seizes the worms you must not immediately strike, but allow him, giving off line with the hand, to swim off with it to his lair. A sudden shortening and tightening of the line tell when the bait is gorged.

3956. *A Scottish angler of note* advises that in worm-fishing for trout, and we presume for some of the salmon varieties also, we should always fish up instead of down the stream, but which practice Mr. Stoddart, in our opinion, very justly discountenances. We always in worm-fishing either for trout or salmon used a short rod, which we cast before us down the stream, bearing to the right or left as circumstances dictated. Mr. M'Finn, a writer in *Blackwood's Magazine*, directs that in baiting the hook with a worm you should thrust in the point of your hook near the tail, and yet leave the tip bare. *The Scottish Angler*, Mr. Stoddart, in our opinion very justly reprobates this practice, as he does also M'Finn's directions, that in worm-fishing it is better also, and as we think he most judiciously advises, to conceal the hook, and allow the worm to be carried forward by the current; or if the current be strong, to append a few heavy shot to sink the bait in its transit along the bottom of the swim. This may be thought to be somewhat "travelling out of the record;" but when it is considered that worm-fishing both for salmon and trout is much practised in Scotland by very ardent anglers for both these fish, we hope we shall stand excused.

CHAP. XIII.

ENGLISH ANGLING LOCALITIES.

3957. *It has been the custom* in almost all treatises on angling to give a list of rivers, and the fish they yield; but we shall here deviate from the practice, considering it inexpedient to swell our pages with matter easily accessible elsewhere, to the exclusion of information not every where to be met with. If any general list of English fishing localities be wanted, Mr. Holland's elegant work on angling generally can supply it. Mr. Salter also is a very

excellent Mentor as regards the localities on the Thames and the Lea particularly. But this omission deserves more "honour in the breach than in the observance," for, as we have observed above, so wide a range would deprive our readers of much matter that we consider more interesting because less known. For instance, if we transported the reader to what are termed the Lakes, we think it very probable that we should introduce him to scenes so novel and so interesting, that although we have twice visited them, we should be delighted to do so again.

3958. *In making a tour*, the principal *object* of the tourist should be defined. If, for instance, he be enamoured of scenery, and can handle the pencil, let him resort to the lakes of Cumberland, where, though the sport to the angler is not so great as is yielded by the rivers Eden, Derwent, and Petterell, the deficiency in this respect is amply compensated for by the grandeur and sublimity of the surrounding scenery. In the twofold character of artist and angler, Mr. Hosland is worthy of all imitation, for not only are his sketches of nature admirably made, but his success as an angler indisputable. We are well pleased with his account of the little river Petterell, a tributary of the Eden, near Carlisle. We have ourselves taken trout there in abundance, but it was not with a fly of wren's tail and grouse hackle, as Mr. Hosland recommends. Our most killing fly was an odd compound, a dark grey feather for wings over a coddling-fly body, dark legs, and two moderate whisks. We were led to the trial of such a bait made on the spot, from seeing the trout rise to a fly of this sort, which we endeavoured to imitate, particularly when a breeze sprung up with passing clouds. But this by the way. We need not tell the reader that he will find that rare fish, the char, in Ullswater, Buttermere, and Crummock Water. We may add, that were there nothing to see in this country but Ullswater, it would itself repay any one, with the leisure and the taste to appreciate its beauties, for the trouble of a visit. We must also recommend him to possess himself of its mimic representation, which graces p. 272 of Mr. Hosland's *British Angler*.

3959. *We need hardly inform the reader* that students are wont to retire to Keswick in some numbers during the Vacations, and we can well imagine that the beauties and the grandeur of the scenes around them must deeply impress their minds with veneration for their Great Maker. The study of Nature's works might utterly destroy all approach to atheism. Had Tom Paine, as he is familiarly called, been a student of Nature, his infidelity might have vanished as snow before the sun. Skiddaw is one of the lions of this romantic country, and fatiguing as the ascent is, the pain is converted into pleasure by the grandeur of the almost boundless expanse spread before the eye. We may hint to the angler who may venture up this ascent the propriety of taking a gun with him to secure a dotterel, the feathers of that bird being in extreme request in fly-fishing in the Derwent Water. Brassenthwaite Water, Crummock Water, and Buttermere, are all objects of great interest to the angling tourist, and no less so to the sketcher. Passing over many less distinguished localities, we come to Dovedale, a romantic spot, rendered almost sacred by Walton's religious effusions when sojourning there, and graced by his anglings with his friend Cotton. In veneration for these worthies we took a sketch of the house of the latter, which, with two other local scenes, appears in Major's edition of *Walton*. We walked over every part of the old domain, and as may be supposed took particular notice of *Walton's dormitory* when he visited Cotton, and we brought back with us a portion of the mantelpiece of the "Fishing-house," a relic which we still retain. We are glad to say that grayling are still in tolerable plenty in the Dove.

3960. *Northumberland* has ever been the resort of those who inherit the angling mania, and the Southrons and the Scotch both crowd to the Coquet to tempt the trout. Indeed, not only the common herd of anglers, but many of the most remarkable characters among them, may be seen in Coquet Dale. "The grand fault," says an eminent contributor to *Blackwood's Magazine*, "of fly-fishing of this district, and Coquet Dale in particular, is the propensity to an exclusive preference of the *streams*. This, no doubt, arises chiefly from their abundance and beauty; and also from the circumstance of the trout of the Coquet being for the most part only of middling size, which description of fish is generally to be found in the greatest numbers in the streams; but an accomplished pool-fisher will find his account in exercising his art here. Large fish, though comparatively a little rare, are yet to be had in every part of this river, and especially in the neighbourhood of that remarkable rocky pass, the Thrum at Rothbury, where trout from eighteen to twenty-four inches long have frequently been taken. In the vicinity of lakes, where large fish are common, the native angler, in a certain degree, despises the river trout, and fishes pools rather than streams, with a view to size and not to number." (Fortunate, that angling tastes differ, and some streams remain unwhipped!) "During a day's fishing in the river St. John, I observed," says our author, "that my guide, Hewetson of Keswick (whom, by the bye, I would recommend to all Lakers as an excellent piscatory cicerone), was exclusively intent upon the "dubs," as he called them. A good fisher, he mostly fishes up the stream, pitching the minnow with a long line, with a lightness of fall quite unusual, and keeping out of sight of his game with unequalled management. Upon this method of fishing we shall have something to add hereafter. Every minnow fisher has a favourite arrange-

ment of tackle, and infinite are the combinations of hooks, from two even up to eight. My friend, I believe, prefers simplicity; and for the deeps uses only a single long shanked hook. The barb is brought out at the *head* of the minnow, the hook being inserted about the middle, and part of the shank left untied to steady the tail, which covers it. This method may certainly be good, inasmuch as the trout always dashes at the head of the bait. A good deal of time however must be given. It was now getting towards four o'clock, and the aspect of the day had changed materially. A fresh breeze from the west 'curled' the faces of the pools at intervals; the small fly left off 'flirting and rising;' the sun became shadowed with passing clouds, and we marked one or two large fish take the water-fly decidedly. The Coquet is, what is here not unhappily termed, a 'petted water,' the 'season' generally coming on and going off with most capricious suddenness. The sport, however, now commenced in a way I have not often seen—at least, not so often as I could have wished. Whether on pool or stream, whenever a puff of wind blew, success became absolute certainty."

3961. *Our angling recollections of Derbyshire* are so many and pleasant, that it would be ungrateful to omit mentioning the river Wye at Bakewell, and the Derwent at Baslow, near Chesterfield, or the confluence of *both* streams at Rowsley. These places are now so easily reached by railway, that an angling tour to them, or to the Dove, near Dovedale, is rendered delightfully easy. The courtesy of the people of Derbyshire to angling visitors, and the numerous pleasant country inns, where permission is obtained to angle in the neighbouring well-stored stream, contribute to make this county the Paradise of the Fly-fisher. The flies and tackle must be of the finest, and at Bakewell particularly, as the waters are very clear in the summer months. The frequency of the *grayling* in these waters makes them more attractive to the angler as autumn approaches. But the *scenery* of the Peak can *never* be out of season! Yorkshire, too, shines pre-eminent in estimation, especially for its trout fishing. We recommend the tourist who meditates a visit to Scarborough or Harrogate, to take his rods and flies with him, as he will every where around find occasion to use them. The Driffeld also should not go untried, and although the river Hull is in itself a sluggish weedy stream, yielding only pike and coarse fish, yet we have seen good trout in its feeders, particularly in the Driffeld Beck. In this neighbourhood do not forget to buy, as a book of reference, a small but meritorious little work, known as the *Driffeld Angler*. Hornsey Mere in this vicinity is a preserved water, but if permission be got to try it, it will be found to yield pike and perch in abundance. The Derwent also should be visited, and likewise the Aye, which is near at hand. The intellectual angler will not fail, when in this locality, to visit the Cave of Kirkdale, between Kirby Moorside and Helmsley, where Professor Buckland made so many interesting discoveries of the bones of animals not supposed to have been indigenous to England.

3962. *Rothbury with the river Coquet, the Aire, and the Wharfe*, as excellent trout rivers, should likewise engage the attention. We ourselves resided in this neighbourhood, and can safely recommend them to the notice of the angler. The Tyne is much poached, or it would be an excellent trout river: a few salmon are, however, even yet taken in it occasionally near Tynemouth. The rivers of the East and West Ridings of Yorkshire will amply repay the angler for his trouble in visiting them. But in his excursions to these localities, he must not suppose that we promise that all his high expectations will be realised. Trout and salmon are now both comparatively scarce, having been so much pursued both by sportsmen and poachers; indeed, it is not often now that a trout is to be met with that exceeds five pounds. The best are usually found either at the tail of a stream or at the union of two disjointed portions of it, and at the eddying of little falls. In the day the large trout are cautious of coming abroad. At night they are employed in chasing the minnows in the scowers as well as in the rapids.

SECT. I. *Irish Angling Localities.*

3963. *We will commence with Killarney's three beautiful lakes*, which, among other fish, present salmon, and though they are neither so large nor so plentiful as formerly, they are even yet very interesting to the angling tourist. Brown trout are to be met with in these lakes also, which in shape are short and thick: there are likewise white and sea trout in great numbers. The salmon here are said to be shy, but may nevertheless be taken sometimes with a plain fly dressed with dark turkey wings, and at others with a gaudy Limerick fly. To put a stop to the impositions practised on visitors by the native fishermen, Lord Kenmare used to supply the gentlemen anglers with boats; nevertheless, what with the boat's crew and their entertainment, it is always an expensive trip. It is remarkable that the large fish and those in the adjacent waters will seldom take any bait but by the troll. Lough and river Carra, about thirty miles from Killarney, also yield salmon and brown trout. Waterville river, thirty-six miles from Killarney, is a good salmon one, and its lake one of the best in the world for fine sea-trout. There are salmon in it also. The Kerry Blackwater is a good salmon river. The trout and salmon of the Kerry waters are not partial to gaudy flies. They like brown and fiery brown bodies best, with turkey and mallard wings.

3964. *Blackwater river*, near Lismore, county Cork, deserves notice for its salmon fishery, which is the property of the Duke of Devonshire, and although it is subjected to the vast takings of the fishermen, who rent the privilege, as we are told, for 750*l.* a year, it nevertheless supplies very good sport to the angler. The river Suir formerly presented excellent fishing likewise, and in consequence its banks were much frequented with anglers; but the business of the mills proving unfavourable to the breeding of both trout and salmon, this fine river is now little frequented. The Anno however, a small tributary of the Suir, occasionally affords excellent sport; but the finny tribes here are, it is said, so singularly capricious, that after rising freely to a fly, or taking with avidity any other bait, they suddenly leave off, and resist every temptation. The tourist in this excursion will probably visit Limerick and fish the Shannon, the salmon of which are the finest and largest in the empire. The salmon of no other river take such large and gaudy flies as the Shannon salmon. In spring the flies must be tied on the largest sized hooks, and their wings should invariably consist of twelve very large golden pheasant toppings, and the bodies of several joints of gaudy colours, pig's hair, and hackles, the whole ribbed with silver or gold tinsel. In giving at the end of our treatise on fishing a list of the best salmon rivers, we shall describe one or two standard salmon Shannon flies.

3965. *Lough Derg*, which gives rise to the noble Shannon, cannot fail to excite the attention of the angling tourist. The Lough itself is full of pike and perch. Here also the gillaroo trout is met with, which has been noticed by Sir Humphry Davy, and by us also in a former page: but it would appear that it is not always to be found; and a traveller, who was at the same time an ardent angler, tells us, that he found it equally scarce at Lough's Mask, Conn, and Melvin. Pike and perch, however, abound in these vicinities, and in Lough Derg they are taken by a method not very congenial to the taste of the best anglers. A long line or lines trailed behind the boat are baited, one with a small trout, and, if there be two, the second with a gudgeon. In this way many perch and pike are caught, and the average weight of the pike so taken is seven pounds. Bream are said not to be met with in Ireland, which is certainly erroneous, as we have witnessed. A tourist, on whose information we can rely, informs us also that he has taken many at Broadford, a few miles from Limerick: he likewise noticed the increase of roach in the lakes of Rosroe and Fenloo in the county of Clare; which, as these lakes are not infested with pike, have multiplied so fast as to threaten the annihilation of the trout. The lake Inchiquin in this part of Ireland, however, amply atones for this deficiency in trout; for here they really teem, in spite of the numbers taken with a dark blue fly and a red palmer, which are, we believe, standard favourites here. A prized dropper likewise is here in use, known as the rush-fly; it has a reddish body and variegated wings, as those of the snipe, rail, &c. The Lough Tadann, a few miles distant, is also celebrated for the numbers and size of its pike; when we were in that neighbourhood two had been lately taken, one of which weighed twenty-seven pounds, and the other nine pounds and a half, which must be considered good sport.

3966. *The Costello on the Galway coast* is lauded by a tourist, from whom we have gleaned much with regard to a portion of Ireland with which we are unacquainted. By him we are told that the late Sir Robert Staples built himself a house on the banks of this river, purposely to enjoy the sport it afforded; and that he employed as many as ten watchers to guard the water from poaching. Our informant basketed forty-three white trout at one fishing; sometimes a fish was taken by each fly of the two used, and the next day he killed twenty others, weighing together upwards of forty pounds. The river Erne also is one of the most celebrated salmon rivers of this quarter; it carries off the water from Lough Erne, the largest lake in Ireland, and abundantly supplied with salmon. The fishery here was a few years ago leased to Dr. Shiel, who was liberally inclined to give permission to fish in it. The interesting angling tourist we have before mentioned hooked one here which weighed seventeen pounds; and on the same day he took another which showed an hour's play before he could be landed, and, when brought to scale, weighed twenty-seven pounds and a half, which beats by more than two pounds the weight of the one we have elsewhere mentioned (p. 1189.). Our fortunate piscator besides these landed two others of heavy weights. The river Erne, in the neighbourhood of Ballyshannon, county Donegal, is as famous as ever. We shall by and by give a few of the standard pattern flies for it. Dr. Shiel, or some member of his family, still has the fishery, and no gentleman possessing a proper recommendation will be refused permission to angle fairly for salmon in it.

3967. *Pass we on to Lake Inchiquin*, where there are red and white trouts, and pike also of large size. The flies for the former, we are told, are of medium size, having red or brown fur bodies with gold twist, and the wings of rail and partridge mixed. A dropper called the rush-fly is used. The fishing tourist, while in this vicinity, will probably visit the Dargle, which Mr. Hofland has so faithfully portrayed; and if so, he may there recreate himself with viewing the bold granitic coast, and the vast waters of Lough Corrib, which escape through a channel that divides Galway town. The waters here yield vast quantities of salmon, and a long mill-wall offers a favourite stand for fishers, permission to angle being usually granted on application. Should the tourist wend his way towards Sligo, he will

meet Lough Conn, which is an extensive sheet of water ten miles in length and of considerable breadth, offering a vast fishing expanse. Ballyshannon, we must repeat, presents the angler with excellent sport in salmon fishing: this is in fact the case with the whole of Connemara and the adjacent districts, all the loughs and rivers here being amply stored with salmon and trout in most of their varieties. At Ballina, the *Angler in Ireland* tells us it is almost the universal custom to fish for salmon with two small flies tied on a single gut; nor are such variations uncommon also in other Irish localities. A bright speck in this rude though romantic part of Ireland is Delphi, a sporting lodge of the Marquis of Sligo. Lough Duloch (the black lake) is also a point worthy of the fisher's attention, exhibiting as it does romantic scenery, and, what perhaps may be more to his taste, furnishing plenty of salmon and sea-trout. The monstrous ridges and peaks which here present vast assemblages of mimic state, and jut out in rude figures, are worthy of admiration. Ben Bane, as one of them, is said to be 2396 feet above the level of the sea.

3968. *The fish of Galway* literally teem in the waters, which occupy a vast chain of lakes penetrating the mountains, so that the angler can here never draw a blank, provided satiety does not cloy. The weirs however, in some parts of Ireland, obstruct the passage of the fish: in Lough Schrub, nevertheless, this is not the case; and here the white trout are plentiful, but rise best, as we are told, to a black rough-headed fly with dark wings. Lough Luggen also yields trout, the taking of which is not fettered with any particular drawbacks. Connaught and Munster likewise abound in lakes and rivers well worthy of a visit from the angler. In the neighbourhood of the Giants' Causeway, and in Lough Neagh and its vicinities, salmon and trout in all their varieties are abundant.

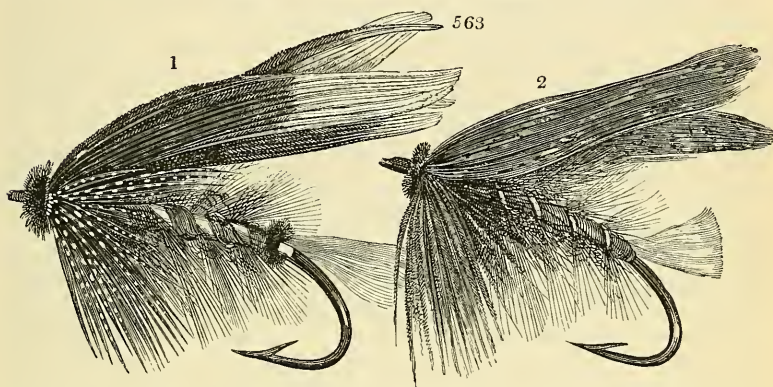
3969. *That the lakes of Killarney* are prolific of interest, we hardly need to repeat; but our limits will not permit us to offer any detailed description of their beauties; nor indeed is it necessary here; for although the beauty and grandeur of these scenes remain to the tourist, the attractions to the angler have long ceased. Salmon, it is true, still pass up the waters, but the numbers are few and their size is limited. The means of transit from thence to the London market have been so increased, and the stake-nets are so constantly at work, that few escape, and consequently few breed here. We believe also that the salmon are not themselves in such plenty as formerly. This scarcity is complained of throughout Ireland, this land of lakes and streams as we may call it. There are however in all the rivers and loughs brown trout in plenty, some short and thick, others long and lanky. The sea-trout yields excellent sport; but in all the rivers the period of arrival differs somewhat: the greater number, however, come about May and June. In the Lakes of Killarney, it is said, there are no white trout, though they are so numerous in other localities; but this we doubt. Departing hence, let us now transport our views northward towards Connaught, glancing only at Loughs Corrib and Mask; the former famed for its salmon and trout, and the latter for its perch and chub. Here, as the traveller reaches the heights of the mountains, the roaring of the Atlantic meets his ears, and the fishing eagle may occasionally be seen perched on the rocky acclivities; while below it is not uncommon to mark the track of the otter and at the water's edge the relics of some of his victims. In these wilds all animated Nature presents one scene of carnage and destruction, over which, however, the reflecting angler must feel himself bound to preside, for *he* destroys for pleasure, *they* for want. As we pursue our fishing tour into Fermanagh, inspecting the large loughs which here present themselves, we learn that they all teem with salmon in their several varieties, and with trout also. Tourists, however, are not as frequently met with in Connaught as in Clare, Galway, and divers parts of Munster; consequently, although there is no lack of fish, yet the facilities of angling travel are, as we suppose, lessened: we therefore would recommend the tourist, after having wetted his line in these more northerly points of the island, and having visited the fine expanse of Lough Neagh in Leinster, to pass down its canal to Newry and Dundalk, and thence along the banks of the Boyne, so famed for the battles which have been fought in its vicinity, and the noble salmon which make their way up its waters, as displayed at p. 1189. We are aware that we have done little justice to the fisheries of this fine country, and to its general sporting aspect; but, as we have already observed, we have been compelled to restrain our inclination to enlarge by reflecting on our necessarily prescribed limits.

3970. *As regards the flies in use in Ireland* for the capture of the various members of the salmon family, there are many set patterns. We shall give a few of the best modern ones, and for the best Irish rivers. — *For the Shannon*. No. 1. First size for high spring-water, orange silk tag, fur tag of a darker shade laid next; tail, golden pheasant topping; body, half light orange, half blue silk, broad silver tinsel and gold twist laid together, a lightish blue hackle, stripped on one side, over body, jay under shoulder, yellow head (seal's fur dyed yellow); wing, ten or twelve long toppings, yellow feather from the blue macaw, sprigs of the leading tail feather of the golden pheasant, white feather from the cock's neck dyed party-coloured, red, yellow, and blue. Hook No. 1., or the largest sized Dublin hook, made by Phillips of Ellis's Quay, the best maker now in Ireland. The wings of all Shannon flies are much the same, the golden pheasant toppings in abundance being indispensable. — No. 2. Body, half orange, half black floss silk or pig's wool, blue

silk tag, plain ginger hackle over body, silver tinsel and gold twist, jay under shoulder and blue fur head. Wing and hook as before.—No. 3. Pomona green floss silk body, blood red hackle over body, orange tag, jay under shoulder, blue head. Wing and hook as before.—No. 4. This fly is called “the goldfinch.” It is a low water or summer Shannon fly, and is dressed thus:—Body, black floss silk, gold colour tag; tail, small topping, gold tinsel, and ginger hackle over body; wings, eight or nine moderate-sized toppings, red macaw feelers; head, light puce fur. Hook, No. 6. and 7. — *Flies for the Blackwater, co. Cork.* No. 1. Body, donkey's fur, from the butt of the ear, or hedgehog's fur, silver tinsel, gold colour tag; tail, a few sprigs of mallard and golden pheasant breast feather; a darker shade than tag under the shoulder; blue or blood-red head; wings, mixed fibres of golden pheasant tail and breast feathers, mallard and brown turkey, blue and yellow macaw feelers. Hook, No. 5. and 6. (Phillips's).—No. 2. Body, light brown olive fur, and hackle same colour, gold tinsel; tail same as before, golden yellow tag, a very short joint of grey fur between the tag and olive fur; wings, as before, jay hackle outside them; blue or deep red head. Hooks, as before.—No. 3. Body, dark or puce silk, over which a golden olive hackle and silver tinsel; jay round the shoulder outside the wings, which must be rather gaudy, and have a few fibres of red parrot feather; tag, golden yellow silk, above which two turns of black ostrich harl; head also of black ostrich. Hooks as before. These three last flies kill well at Lismore when the water is high. In summer time they must be dressed two sizes smaller. A fly called “the blue jay” is a standard fly in all Irish rivers; it is dressed thus:—Body, light blue silk and gold tinsel, orange tag and black ostrich harl near it; tail, sprigs of golden pheasant breast feather, mallard, and light blue macaw; blue jay hackle over body; blood red hackle at the shoulder; wings, golden pheasant breast feather, mallard, light blue macaw and kingsfisher; black ostrich head. Hook, No. 6, 7, and 8. This fly, dressed on a No. 8. hook, with orange instead of blue silk for body, will kill in summer and autumn. We have used it successfully in the rivers of the highlands of Scotland. — *Flies for the river Lee, co. Cork.* No. 1. Body, first joint, next the tail, blue seal's fur, and blue hackle; second joint, grey fur and grey hackle; third and shortest joint, strong fiery brown fur and hackle; silver twist over body; orange silk tag; tail, fibres of blue and red macaw, golden pheasant breast feathers, mallard and blue peacock; wings of the same feathers of the tail, but full; black ostrich head. Hook, No. 5. and 6. for high water; for low water, No. 8. and 9. This I consider a general fly for all salmon rivers.—No. 2. A grouse hackle and bright golden olive one, struck together over an orange silk body, gold tinsel, jay under the wings, which must be the same as before, as well as tail, tag, head, and hooks. — *Flies for the Erne, near Ballyshannon.* No. 1. Body, yellow or gold colour floss silk, ribbed with gold tinsel; ostrich tag; tail, two toppings; legs, a bright yellow hackle from the tail up; a little yellow green mohair, and blue jay at the shoulder; wings, two toppings mixed with neck feathers, a few fibres of ibis, bustard, mallard, Argus pheasant, peacock wing, yellow macaw, and a little green parrot; ostrich head. Hook, No. 8. and 9. This fly will kill well in the river Shin, Sutherlandshire, at low water.—No. 2. Body, orange floss silk, ribbed with gold tinsel; a deep orange hackle, struck over the body, and blue jay at shoulder; wings, two cock of the rock's feathers, with a topping at each side of them, to extend a little longer over the bend of the hook; fibres of bustard, and jungle cock, and macaw for feelers; tail, a rather long topping; head, black ostrich, with a little blue mohair beneath it. Hooks as before.—No. 3. Body, lilac floss silk, with a tag of orange mohair, gold twist; blue dun hackle for legs; blue jay and kingsfisher at shoulder; wings, a few fibres of mallard, mixed with toppings; neck and tail, feathers of the golden pheasant, and also a few fibres of the cock of the rock, bustard, guinea-hen, and green parrot; feelers, blue and yellow macaw. Hook, No. 8. and 9. — *Flies for the river Bann, co. Antrim.* No. 1. Body, claret pig's hair; yellow tag, gold tinsel, and a dark claret hackle struck up from the tail, and an orange hackle round the shoulder; wings, brown mallard, mixed with bustard, golden pheasant toppings, and neck and tail feathers; blue macaw feelers, topping for tail, black ostrich head. Hook, No. 8. and 9. It may be here remarked that the flies for the north of Ireland are gaudier than those for the rivers of the south.—No. 2. Body, fiery brown pig's hair, gold tinsel and amber hackle, topping for tail; wings, mallard, and neck feathers of the golden pheasant, mixed with bustard and guinea-hen; two fibres of blue and yellow macaw for feelers; yellow hackle at the head, finished off with black ostrich harl. Hooks same size as before. — *Flies for the river Bush.* No. 1. Body, orange mohair, and claret hackle over gold tinsel; wings, brown mallard; tail, fibres of the same feather; black ostrich head. Hook, No. 7, 8, and 9. The wings of this fly being very plain, it will kill well in the Kerry waters, in which gaudy flies are not generally successful. No. 2. Body, amber mohair, gold tinsel, amber or fiery brown hackle; tail, a small topping; wings, brown mallard, and turkey tail of the same colour, mixed with a few fibres of golden pheasant neck feathers, a fibre of blue macaw on each side for feelers; black ostrich head. Hook, No. 8. and 9. This is a good general fly at low water. — *Flies for the Blackwater, a good salmon river, co. Kerry.* No. 1. A blue and blood red hackle over a golden olive body, gold tinsel, and

orange silk tag ; wings, mallard ; golden pheasant breast feather, blue macaw and red parrot ; head, black ostrich. Hook, No. 8. and 9. This fly will be taken in nearly all the Kerry waters.—No. 2. Golden brown body and hackle ; gold colour fur for tag and under the shoulder ; wings, &c. as before. — *Flies for the river Waterville, co. Kerry.* No. 1. Body, fiery brown mohair, same coloured hackle, gold twist, and a small claret hackle round the shoulder ; wings, mallard ; blue macaw and golden pheasant neck feathers, neatly mixed ; tail, mallard ; red ibis, blue macaw, and golden neck feather, a fibre or two of each, and black ostrich head. Hook, No. 8. The wings of this fly will answer for all those suited to the Waterville river.—No. 2. Body, claret pig's hair, ribbed with gold ; black cock's hackle, yellow tag, and a roll of black ostrich hair above it ; yellow pig's hair at shoulder ; wings, tail, head, and hook as before. The rivers and lakes of Kerry abound with sea-trout, for which the best general flies are those with dark fiery brown bodies, blue and fiery brown hackles, gold coloured necks, and plain wings of brown mallard, turkey, grouse, or landrail's wing feather. The two last feathers suit small flies best. We are indebted for most of the information in this section (3970) to *A Handbook of Angling*, published by Longman & Co.

SECT. II. *Scottish Fishing Localities.*



SCOTTISH FLIES.

3971. *In this kind of flood and mountain* it is difficult to decide at what point our notice should begin. It is almost from end to end one vast picture of grandeur and sublimity ; and as for lochs, where shall we see any to compare with those of Scotland ? The mighty Loch Lomond, already depicted in p. 532., at once presents a vast watery expanse so grateful to the angler, and the Alpine heights which crown it greet the tourist, together forming the pride and boast of the Scottish nation. Indeed, the whole country presents a curious *mélange* of picturesque beauty and savage grandeur. In proof of its grand features, let us regard some of the mountain torrents pouring down their liquid contents into the abyss below, as portrayed in the fall of Fyers (see *fig.* 564. p. 1200.), which, if not equal in the quantity of water to some others, amply compensates the deficiency by its picturesque effect. In this locality is found a chain of lakes from Loch Ness to Loch Loechy, all of which yield the angler ample remuneration for the trouble he takes to reach it. The western coast, opposite to Skye's indented inlets, will interest him from the herring fishery carried on in their bosom ; but, be it remembered, it is in Loch Fyne that the finest herrings are taken. The angler in Scotland can never draw a blank : it must, however, be confessed, that the best accommodations are to be found in the neighbourhood of the Lowland rivers, which are also most accessible. But the enterprising angler, nevertheless, will not refrain from visiting the Orkneys, and *their* well-stored streams. Among other interesting matters, he may have opportunities of prosecuting the inquiries which have led Shaw, keeper to the Duke of Buccleuch, to more than suspect that the salmon and parr are identical species. Here, too, he may revel in the delights of taking all the salmon varieties in general, as well as trout of enormous dimensions and weight. He may commence early in March ; but, be it observed, his principal sport will be in the taking, for the fish are then by no means well conditioned. Mr. Thomas Tod Stoddart, in his admirable little tome, *The Art of Angling in Scotland*, thus observes on Scottish travel : — “ Before April, let the angler proceed upwards, by Melrose to Clovenford and Innerleithen. Should the weather be cold, he must not expect first-rate trouting ; but if warm, and what is termed in England the March-brown fly be upon the water, depend upon it he will cram his creel. St. Mary's Loch is nine or ten miles from Innerleithen, and at all events a trip should be taken in that direc-

tion. Yarrow and Meggat are both good streams, and in the loch itself the spring trout rises freely at a large dark fly. The angler may also try the Lyne and Biggar waters, and crossing over to Clyde, fish down to Hamilton. A salmon or two may be killed in this month below Stonebyres. Indeed, it may be asserted, that Scotland affords to bait fishers of every kind excellent sport. Where the fish are small, they nevertheless prove lively, and ready takers, and they dispute their capture with an interesting resistance which enhances the sport in the eyes of the angling zealot. The waters here being mostly clear require the use of fine tackle; the gut particularly should be transparent, and the hook as small and fine as is consistent with the strength of the fish the angler is likely to be engaged with. When the fish bite readily, and very quickly seize the bait, as is sometimes the case, be prepared to use a line rather shorter than the rod. This plan is particularly recommended for fishing in the becks and burns, where the *stroke*, to be effective, must be as quickly made as the bite itself; avoid, however, in this quick striking with a short line in the Scottish waters, never to do it against the stream.

3972. "From Hamilton proceed to Glasgow, and descend by the daily steamer to Inverary. Loch Awe is only nine miles distant from that town. There are plenty of inns in its neighbourhood; at Dalmally, Cladish, Portsmachon, and other places. To fish Loch Awe properly a boat will be required, which can be obtained for a reasonable hire. The boatman employed is always competent to instruct one upon the likeliest feeding grounds, and other such matters. We may state that the best part of Loch Awe for the *Salmo ferox*, or great lake trout, is above where the river Awe issues, and directly below Ben Cruachan. In the rivers Awe and Urchy, salmon abound; the former also is much frequented by whittings. When inclined to leave this district, the angler may strike in upon the military road, passing Queen's House, and leading through Glencoe. This he may do by proceeding up Loch Etive, and the stream which falls into it, or in many other ways; but none certainly so romantic as this. Glencoe leads to Lochleven, an arm of the sea, and from it the angler may proceed to Fort William either by Ballychulish, or by a mountain path through Glen Nevis, well worthy to be preferred by the lover of Nature. At Fort William let him try the Lochy: he will find it, if slightly swollen, a first-rate river, especially for sea trout and grilse. From thence he should proceed to Inverness by steamer, and cross over about July to Sutherland, or else strike aside to Loch Laggan, by the course of the Spean. He will find near the head of the loch a good inn, and a good fellow of a landlord. Dalwhinnie, above Loch Ericht, and Dalnacardoch on the Garry, a short distance from Loch Garry, should also be visited; and passing through Blair Athol, the angler may follow the stream down to where it meets with the Tummel; he should then hold up the Vale of Tummel to Loch Tummel, where large strong trout are to be taken from a boat. At Kinloch Rannoch, a few miles farther on, there is a good inn; and the angling on some parts of the loch is reckoned excellent, as it also is on the Gawin and Loch Lydoch. Crossing the hills to the south, a forenoon's walk will bring him to Glen Lyon, down which he should angle his way to Fortingall, and in the evening settle himself at Kenmore on Taymouth. Instead, however, of following the course of the Tay towards Dunkeld, we would advise him to proceed by the loch side to Killin, from thence to Earn Head, the Trosachs, Lochs Chon and Ard, Stirling, and Edinburgh. Should he, however, prefer visiting Sutherland and Ross-shire by Inverness, we would leave him to select his own route, aware that he can scarcely go amiss after good sport among the numerous waters of these northern districts. The Shin, Inver, Kirkaig, and others, are all, in their season, good salmon rivers, and the *Salmo ferox* inhabits many of the large reservoirs and lochs." (*Scottish Angler*, p. 126.)

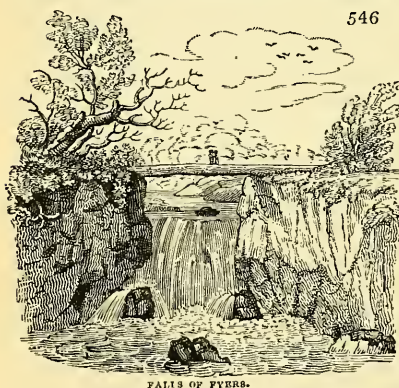
3973. In Sutherland the gillaroo and the great lake trout also are found throughout its principal waters, particularly its lakes. In the river Brora, proceeding from Loch Brora, first-rate fishing is to be met with, and in all the feeders of the loch, all of which own the Duke of Sutherland as their lord, who, be it observed, well deserves such a patrimony, for he encourages travellers to visit his waters, and never refuses leave to angle fairly in any of them. The rivers of Ross-shire, Mr. Stoddart tells us, are good, and that pike and salmon are to be found there. Loch Marre is the great lion here, both for its size and the quantity of fish it yields. The river Spey, as a salmon river, we are told, has no equal in Scotland; so prolific is it, that it produced a revenue of six thousand a year to the Duke of Gordon. Banffshire offers numerous trouting streams and resting-places for the angler, as at Toman-toul on the Avon. Keith on the Isla, and Huntley on the Deveron, furnish good fishing, and also good accommodation for the angler. In Aberdeenshire, we believe that the best fishing stations are at Ballater on the Dee, about forty miles from Aberdeen, and Castleton of Braemar. Forfarshire boasts of the North and South Esks, which yield salmon in plenty. Trout and perch are also found in abundance in some of its waters. So prolific of fish is Scotland generally, that what has been already stated will equally apply to Stirlingshire, &c. and to Lanarkshire also. But as we must draw to a close, we would again strongly recommend the reader interested in the angling of this famed country to consult *The Book of the Salmon*, by Ephemer, recently published by the Messrs. Longman, in which the best rivers in Scotland are described, and the best flies for them.

3974. *Scottish waters*, be it observed, are not only to be admired for the grandeur of their appearance, but they deserve notice for the diversity of character they present. It has been very justly remarked, that three kinds of streams exist in Scotland, and as we observed in a former page, we might indeed notice the Moorburn as a fourth. The first stream owns only rocky waters, where the bottom has but little soil or channel; at least there is usually but a thin layer of the latter. Here such trout as would please the angler never abound; indeed, one might fish a season through and not meet with such a one as is depicted in p. 1075., for here the nature of the rocky banks is not such as to yield any living matter; worms, frogs, leeches, water insects, and frequently even minnows, will not abound in these vicinities. Where foliage, on the contrary, overhangs the banks, food is often found from the insects bred there, and which afford a variable treat to the fish during their several changes. Nevertheless, it is true that such streams as those we have noted harbour salmon, grilse, and the varieties known as the white and sea trout; but river trout of any considerable size are not usually to be met with there. A second variety of river which presents itself in Scotland, is one that is considered very favourable to the growth and increase of trout: it is one less rocky, with banks less precipitous, and presenting some herbage, or rather bushes, as harbours for insects and covers for the fish; in fact, whenever any Scotch stream approaches to the appearance of an English river, it may be vouched for as containing trout. The Tweed among the Scotch rivers approaches nearer to this character than any other, and in fact it may, in common with all that resemble it, be considered as of the third kind of stream hinted at, and sought for by every angling tourist.

3975. *The lochs of Scotland* form another grand feature in the aspect of this country. Mr. Stoddart, in his emphatic language, writes, "Lochs! we love the word lochs, as applied to those hill-girdled expanses which decorate our native land. Lake is too tame a designation—a shallow epithet. It has nothing to do with mountains and precipices, heaths and forests. Beautiful it may be, very beautiful! Winandermere is very beautiful; Derwent Water is very beautiful; Buttermere, Ullswater, and Coniston are very beautiful; nay, in truth, they are of a higher nature than beautiful; for these all lie among hills—but not Scottish hills; not the unplanted places—dwellings of the storm and the eagle!" (p. 9.) Mr. Stoddart's description of the vast changes which these expanses have undergone within the last five centuries is also very interesting; but for information on this point we would refer the reader to his small but comprehensive tome. From his account, it appears that forests then grew where nought is now seen but bare turf. They have yielded to the axe, and the ploughshare has furrowed over the cheek of nature as she now appears. This admirer of lochs particularises Loch Lomond, Loch Awe, Loch Laggan, Loch Ericht, Loch Rannoch, Loch Tay, Loch Earn, Loch Lubnaig, Loch Ardhay, Loch Ketturin. He almost rapturously applauds St. Mary's Loch, which he calls his best beloved "Yarrow's nurse," and continues to say of it, "a sheet of water, not sublime, nor yet singularly beautiful, for it wants a fringe of wood and a few islets, and those swans described by Wordsworth so poetically, but strangers ever, unless in the depth of a severe winter, to its bright and quiet surface; yet, truly, there is a winning something about it—a 'pastoral grace,' that lures the angler's heart. Nor does it want substance for pastime; well adapted to the nature of trout, it is altogether a favourite resort. Yet the fish caught therein, if we except one variety, are in general soft and flabby, not agreeable to the taste, and very far from equalling those found in the Highland lochs, or in Loch Leven." (p. 10.) These different lochs all produce trout, but as we have long suspected, and long stated as our opinion, such trout are found in all of them to vary in form, in colour, and in marking. Even their habits have submitted to changes wrought by locality, some taking most readily the fish bait by trolling, and others by mimic representations of insects on the wing. Of these variations from one standard type, Mr. Stoddart observes, "we have detected more than a dozen sorts after one day's angling, all perfectly distinct, and individually marked. In St. Mary's Loch this fact is particularly observable; but we shall devote more appropriately to this matter a succeeding chapter, although induced at present to show some reason why and how this variety is produced. Streams, by their continual motion, cause in many parts a sameness at the bottom, or channel, upon which account the different feeding grounds are alike as to what they yield; hence the trout are naturally similar, and of one appearance; still, as often is the case, especially in slow waters, if there be a variety of feeding grounds, you find also a proportionate variety of trout. It seldom happens, however, that above three or four sorts are to be discovered in the same river, owing, as we have just mentioned, to the general sameness of the channel. Lochs, on the other hand, which are stationary and unimpaired below, contain, according to their extent and the soil which they cover, so many beds or feeding grounds of a separate nature, producing each its variety of fish. The streams and burns also which they receive are often widely different, some rocky, some passing through rich and fertile valleys, others over black and barren moors, to which (their native abodes) fish, when swept into a huge reservoir, are unable to return, being bewildered as to the entrance back, or more possibly induced to remain in a wider though foreign sphere."

3976. *In trolling for large fish*, as is practised in Loch Awe and other places, a boat is necessary; nor do its other inconveniences detract from the pleasure of such delicious sport: nevertheless, in ordinary angling, we love the pedestrian style; we practise not the art cavalierly, or on horseback, as some boast of. Let the tourist attend to this, and never indulge in the abomination alluded to. "And now to speak of a crime in loch fishing lately introduced. Let every true angler abjure the *lath*; it is a poacher's instrument, killing no doubt, alarmingly fatal; so is lime in a narrow brook, or vitriol, or the pock-net. Pretty means these for an honest angler to use! ingenious and crafty contrivances wherewith to while away time and make merriment! This engine of death and torture, appropriately called the *Otter* by James Hogg, of Altrive, on account of the similarity of its movements to those of that animal, consists of a thinnish board of wood, thirty inches long by ten broad, shaped in the form of a boat, and loaded below with a narrow strip of sheet lead. This, when placed lengthwise in water, presents an upright position, sinking to within a short distance of its top. Near the extremities of this board are several holes, to which is attached a cross band or string of cord, as in a paper kite. In fact, the whole apparatus is upon the same principle. To this cross band the line is fastened, generally made of oiled silk, and very strong; along it, at regular intervals, are hung a score or two of fly-hooks of all sizes, also baited minnow tackles, the whole occupying about thirty yards. More line is however necessary, wound upon a pirn, and held off the ground by a remarkably stout rod. Two individuals are required to bring this engine into action; one of them holds the rod, and the other, at the distance of the line occupied by the tackle, sets the board adrift. The former, who stands also at the margin to windward, then moves forward. The lath sails out, carrying with it the whole train of flies, until almost at right angles with the fisher. Still he proceeds; this singular apparatus, which it requires some degree of skill to manage, still keeping pace with him. When one fish is hooked, there is no necessity for drawing it ashore immediately. The grand point is to drag in a dozen at a time, although, from the length of "durance vile," many are taken in a dying and exhausted state; others escape with injured mouths, to become thin, sickly, and shy, and of these not a few expire in this condition. Such is angling by means of the lath, a system in practice on the English lakes, and gradually creeping northwards to the extinction of that nobler and more gentlemanly craft, which gives precedence to skill and talent over brutality and ignorance. The harm of this system is incalculable, far beyond even its profits; for the fish thereby injured and deteriorated greatly exceed the number taken.

3977. *Among the picturesque scenes which Scotland affords*, we may notice the Falls of Fyers (*fig. 564.*); and though the volume of water which it pours forth is much exceeded



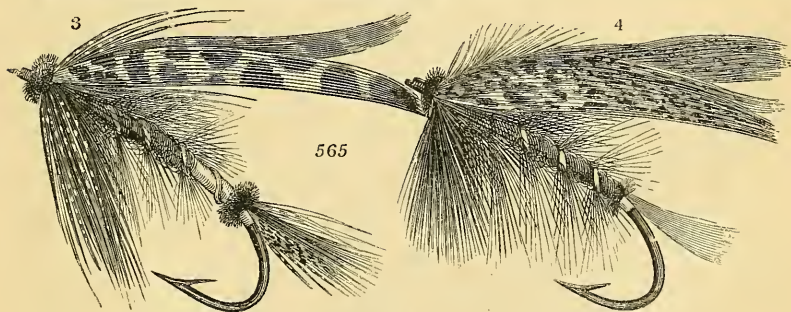
FALLS OF FYERS.

by some others, few, if any, exhibit more masculine features, or more of that amenity, mixed with grandeur, which the lover of Nature delights to feast his eyes on. Drummond Castle in Perthshire we would also hold forth to the admiration of the intelligent tourist. The antiquities and the historical records of the more ancient, and the beauties of the modern castle, it would be foreign to our purpose to dwell on; but we may state that, situated as it is, on the rocks of Torliem, the last and least of the Grampians, it overlooks an endless variety of wood and water, forming a panoramic view of indescribable beauty in the Vale of Earn. The lake which greets the eye of the angler is inexhaustible in the numbers of its fine trout, &c. &c. and being supplied with water from innumerable burns and rills, its products are of the most varied character. Thus trout here are of different kinds: two sorts are particularly to be noted, the yellow and the silvery coloured; both however show excellent sport, and both prove to be delicious eating. Perch also are found here in abundance. Loch Earn we have already mentioned, but we believe we have not noticed the clear and romantic river known also as the Earn, which issues from it. Until this river was pestered with salmon nets, weirs, and cruibs, which are baskets set to catch these fish, it was one of the most prolific waters, and one of the most pleasant for the angler that could be named. We are however told, that in spite of these impediments, a fly known as the red cock will, even at the present time, insure the taking of salmon and trout here in abundance. In some of these vicinities, but particularly in Loch Maben, if we mistake not, the fish known as the vendace is to be met with. This delicate and singular species of the genus *Coregonus* (*Coregonus Willughbii*, of Yarrell) has been stated to be confined to the above mentioned water; and although the very high authority of Sir William Jardine

ought not to be lightly called in question, yet we have heard of its being met with by more than one tourist in other Scottish waters.

3978. *Dumfries-shire* has been treated of as an angling locality of note by the respected and accredited angler, Peter McFinn, who in *Blackwood's Magazine* for 1819 thus discourses:—“The rivers, or rather the burns, in the upper district of Dumfriesshire, and on the boundary of the adjoining counties, are all intimately known to the author of this article. Most of them afford excellent sport to the angler; and it may not be unacceptable to some of your readers to particularise a few of the most remarkable. The Cairn, which descends from the western side of the county, and which joins the Cluden, is an excellent fishing stream, though rather embarrassed by wood, and above Monchire it branches out into a variety of tributary streams, every one of which is stored with fish. Upon the main stream stands the seat of the Earls of Glencairn, a family long renowned in Scottish story. Next to these, passing eastward along the north of Nithsdale, comes the Shinnel, which makes its way along a most romantic glen, which on account of the beautiful woods which cover it, is inaccessible to the line for a great way up. The Scar succeeds, a larger stream, and when fished up Glenwhargan and the adjacent glens, is eminently fitted for successful sport. The scenery is most bold and striking, and on the hazel scrags, which cover the steepes for a considerable way upwards, there are excellent nuts, of which the people in the neighbourhood make a yearly traffic. ‘The Grey Glede of Glenwhargan Craig’ is celebrated over all the country in the sports and rhymes of infancy. Eagles were seen in this direction not many years ago. Passing still farther east, we meet with the Nith, more famed for the purity of its waters, the rapidity of its current, and the adjacent castle of Drumlanrigg, than for trouting. There is, however, excellent salmon-fishing, were one allowed to practise it. The tributaries of this river, the Carron and the Cample, are too much fished to be at all remarkable; yet towards the *heads* there is, particularly in wet weather, often the very best amusement. From the elevated and picturesque hills of Queensberry, streams pour into the Annan and the Ae in every direction, and all these are excellent. The Cassee, which passes by the hospitable residence of Mr. Harkness (Mitchelslacks), to whom and to whose moonlight whiskey I hereby introduce all fishers, was once unrivalled, but is now sadly poached with ‘pike nets and lime.’ The Brawn is still a lovely stream, and after a flood in particular it affords unequalled bait fishing. I have often killed seventeen or eighteen dozen here in the course of a few hours. But transcendently the best is, in my opinion, after all, the Dar, one of the heads of the Clyde; and were it not for the proximity of Leadhill, from which the locusts of destruction descend in the shape of miners, it would scarcely ever fail to fill the fisher’s basket with trout of the most beautiful spots and proportion. There are some *lesser* names, such as the Unkle-Shang and Windy Hills, and the Ring-Straeburn, the last of which, in particular, deserves to be mentioned. There is in the neighbourhood of this stream, and amidst the wilds of Garven Muir, a well, which is also called Ring-Straeburn, and a number of stones erected around a large stone in the middle is called the King’s Chair. As this is the line of communication betwixt Nithsdale and Annandale, it is probable that one of our Scottish monarchs, in passing down upon the Johnstones and the Jardines of Annandale, may have pursued this route. What says Walter Scott about this? With the burns on the east of the Annan I am not so well acquainted, and shall leave the character of these to be given by one who has spent a sporting season at Moffat Wells. I may just observe, in addition, that all the burns I have mentioned on the east of the Nith are entirely freed from the teasing embarrassment of wood, in which respect they have manifest advantage over them in the west.”

3979. *The salmon flies*, already alluded to as being particularly effective in taking the fish in some Scottish waters, are four in number. Nos. 1. and 2. head this article (see p. 1197.), and are thus described with Nos. 3. and 4., as in *fig. 565.*:—



SCOTCH FLIES.

3980. No. 1. *Wing*.—Black turkey with a white tip. *Body*.—Blue mohair or pig's wool, with silver plating. *Legs*.—Black hackle shouldered with a guinea-fowl's feather. *Head and tip*.—Black ostrich feather. *Tail*.—Scarlet mohair. Hook, large.

3981. No. 2. *Wing*.—Brown mottled turkey feather. *Body*.—Crimson mohair or pig's wool, gold twist around it. *Legs*.—Blood red hackle, shouldered full. *Head*.—Peacock feather of a brilliant hue. *Tail*.—Orange mohair. Hook, middle size.

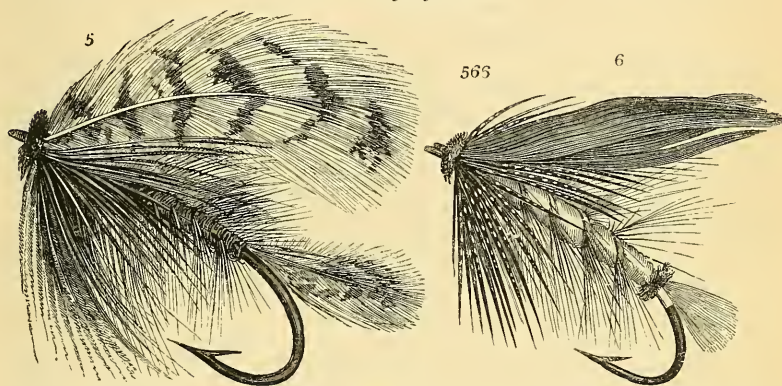
3982. No. 3. *Wing*.—Argus pheasant. *Body*.—Crimson mohair at the head, green mohair in the middle, and yellow silk at the tail, with silver twist. *Legs*.—Blood red hackle shouldered with guineafowl's feather. *Head and tip*.—Peacock feather. *Tail*.—Brown mallard feather, teal ditto, peacock ditto, and dyed yellow mallard feather. Hook, middle size.

3983. No. 4. *Wing*.—Brown mottled turkey feather. *Body*.—Green mohair, or pig's wool platted with silver. *Legs*.—Dun hackle. *Head and tip*.—Black ostrich. *Tail*.—Scarlet mohair. Hook, middle size.

The four preceding flies are peculiarly adapted for the Tweed, but if dressed very small, they may be used with success in most rivers when the waters are low and clear. The following is a list of standard flies for the best rivers in Scotland:—*For the Shin*. No. 1. Body, orange floss silk; yellow tag, tipped with silver twist; above it black ostrich and red tag, to be ribbed with silver tinsel and gold twist; grouse hackle at the centre of the body; teal hackle under shoulder; wings, two neck-feathers of the golden pheasant, over which a mixture of brown and black, and white spotted turkey tail-feather, and brown mallard; feelers, blue and yellow macaw; yellow mohair over the roots of the wing, and black ostrich head; tail, a gold pheasant topping. Hook, No. 4. At this size the fly is a large one, fit for the Shin in the spring. For the summer, it should be made on hooks three sizes smaller, and will kill best morning and evening.—No. 2. Body, yellow mohair, to be ribbed with gold twist and black hackle; tag, yellow floss silk tipped with gold; tail, a small topping; blue jay at shoulder; wings, brown turkey or kite tail-feather, mixed with golden pheasant tail and neck feathers, guinea hen and teal, and a topping bending over the whole; blue and yellow mohair feelers, and blue mohair head. Hook, No. 6. This is a deadly Sutherlandshire fly, particularly for the Shin and Laxford. For the latter river the following is a standard fly: Body, orange floss silk; tag, yellow green ditto, tipped with silver twist, and ribbed with gold tinsel; black hackle, and claret silk under shoulder, round which blue jay hackle; wings, mixture of the fibres of the following feathers,—black and white turkey tail, bustard, red macaw, guinea-hen, golden pheasant neck-feather, and silver pheasant tail-feather; feelers, blue and yellow macaw; head, black ostrich; tail, a few fibres of mallard, dyed yellow. Hook, No. 6. and 7. —*Flies for the river Inver*. No. 1. Body, pale green floss silk; orange tag, tipped with silver twist, and between them black ostrich tag; to be ribbed with gold tinsel, silver twist, and grouse hackle; wings, brown spotted turkey tail-feather, peacock's wing, red ibis, teal, guinea-hen, and silver pheasant dyed yellow; blue and yellow macaw feelers, and black head; small topping for tail. Hook, No. 6. and 7. The above fly kills well on the Shin, so does the following Laxford fly: No. 2. Body, black floss silk; crimson tag, tipped with black ostrich and gold twist, ribbed with silver tinsel and twist, and black hackle; crimson mohair, picked out under the wings, which are to be a mixture of cream-spotted turkey-tail, guinea-hen, and teal feathers, golden pheasant neck and tail feathers, and two or three fibres of bustard; black ostrich head, and topping for tail. Hooks as before.—*A standard fly for the Brora*. Body, a mixture of blue, green, and yellow pig's hair; silver tinsel and black hackle; wings, peacock wing-feather; tail, red mohair. Hook, No. 7. and 8.—*Flies for the Oikel*. Body, brick-brown floss silk; red and black ostrich tags, tipped with silver twist, to be ribbed with silver tinsel and gold twist; grouse hackle full under the wings, which are to be of the following fibres: spotted turkey dyed yellow, brown turkey, teal, blue macaw, red ibis, and bustard; black ostrich head, and topping for tail. Hook, No. 7. and 8. This and the following fly will kill in the river Carsely.—No. 2. Body, yellow brown pig's wool; tag, black ostrich, tipped with gold twist; to be ribbed with gold twist; black red hackle over body, and blue mohair picked out at the shoulder; wings, a golden pheasant neck feather; alongside of it an entire teal's feather, brown spotted turkey, guinea-hen, and wood-duck fibres; black ostrich head, and topping for tail. Hook, No. 8. and 9.—*Standard fly for the Carron*. Body, black floss silk; orange tag; ostrich and silver tip, to be ribbed with silver tinsel and gold twist; grouse hackle over body; wings, turkey feather dyed yellow, mallard, silver pheasant tail, guinea-hen, teal, and Argus pheasant fibres; black head, and small topping for tail. Hook, No. 8. and 9.—*A standard fly for the river Kirkaig*. Body, puce mohair; tag, red ditto, tipped with gold twist; to be ribbed with silver tinsel; black hackle, and a bit of orange mohair picked out at the shoulder; wings, bittern and guinea-hen; black head, and orange mohair tail. Hook, No. 8. The Naver is a good river, and the Oikel flies kill best in it, as they do in the Bozzy and Halladale. All the above rivers are either in Sutherlandshire, or divide it from Ross-shire, in which last county the best rivers are the Allapool,

Dionard, Rennie, and Cannard. Small moderately gaudy flies kill best in them. — *Flies for the river Spey*. No. 1. Body, claret floss silk, with some deep yellow-brown pig's hair towards the wings; orange and black ostrich tag, tipped with silver twist; to be ribbed with silver tinsel and gold twist; claret hackle from tail to shoulder, and round the latter grouse hackle; wings, two golden pheasant neck feathers, and a topping; light brown spotted turkey tail, and Argus pheasant, guinea-hen, and golden pheasant tail-feathers; over the roots of the wings yellow mohair; black ostrich head, and topping for tail. Hook, No. 3. This is a large-sized spring fly. — No. 2. Body, puce floss silk, to be ribbed with gold and silver tinsel and yellow green silk thread, and over all one of the pendant feathers of a brown cock's tail; wings to lie along the back of the hook, and they are to be made of the fibres of a large brown spotted turkey tail-feather. Hook very long in the shank, like a mackerel hook. This is the old standard Spey spring fly. The following is a standard *Spey fly for May and June*. — Body, near the tail, fiery-brown floss silk; towards the head, from the centre of the body, orange floss silk; tag, ostrich tipped with silver twist; the body to be ribbed with silver tinsel and gold twist; orange hackle from tag to wings, under which blue jay hackle; wings, a golden pheasant neck-feather, and fibres of Argus pheasant, and slightly spotted cream-coloured turkey tail-feathers. Hook, No. 4 and 5. For many of the above excellent patterns, we are indebted to *The Book of the Salmon*, mentioned before.

SECT. III. Angling in Wales.



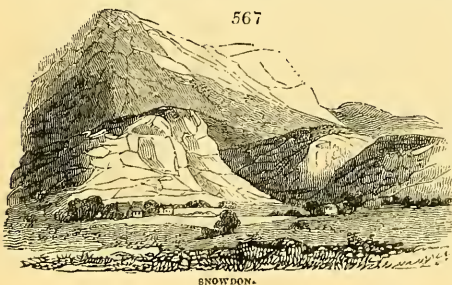
WELSH FLIES.

3984. *For the reputation of South Wales*, it may be supposed the author feels some interest, when he states, that in the vast!! city of St. David's he passed some of his earliest days with his grandfather, who was the acting canon-residentary of the cathedral there. If St. David's city remain as it then was, it has little to recommend it: it owned one grammar-school, and the elevated school-room was built directly over a brawling rivulet which emptied itself into the sea; and full well we remember the schoolmaster angling with a worm out of the school-room window, which amused his pupils more than it instructed them; and his success laid the foundation for a love of the gentle craft that has never left us. To indulge ourselves with a *fancied* retrospect, we will conceive ourselves as a second time leaving the old hall of our fathers where we had in later times been, and thence pursuing the waters of our route, we first met with the *ever winding Towey*, as it is called, with its more diminutive neighbour, the Neath, of which we shall say something anon. The Towey was at that time a fruitful stream, and even at the present day it yields some trout, sewin, and salmon; but, as we are told, it is now the subject of many poaching practices: as it is, however, situated in a cheap and romantic spot, it still has its charms. Its neighbours also, the Tivy and the Neath, are occasionally visited by tourists; and where cheap sport and kind attention are objects, they are to be met with in most of the borderings of this principality. Of the Usk we have to remark, that not much sport can now be insured in it until the angler arrives at Crickhowel. A later tourist, however, recommends that we should make a halt in the Vale of Llangrundy, at a village situated between Abergavenny and Crickhowel; and from what we remember to have heard on a later visit to South Wales, the recommendation is good, as in point of scenery it is surpassed by few parts in this principality. The trout met with here, though not large, are very numerous, and no impediment is offered to the fly-angling tourist in the prosecution of his sport. The lake Llynbann, situated on the top of Vann Hill, is full of trout, which escape all common poaching from the difficulty of reaching the ascent, and the still greater difficulty of bringing away the spoil with the unhallowed gear used in the plunder. Glamorganshire presents also its Neath, a river yielding a crystal stream, in which salmon and sea trout, here known as sewin, are taken.

3985. *There are besides the Usk, the Wye and the Tivy.* A tourist observes on these rivers, that the finished artist would give the preference to the first, which we shall again notice. The salmon fisher nevertheless would not be disappointed in the second, and all who throw the long line would find amusement in the last. The trout in the Usk are the best and soonest in season; and, as far as our own experience goes, this informant is right. Some twelve or fourteen years ago we made a tour into Wales purposely to fish its waters, both north and south; but unfortunately, at Brecon, we were confined so long to our room by a severe cold, that our fishing excursion was frustrated. From the accounts given us, we were not led to believe that the Usk in this locality was very well stored with fish; but in some other spots, which we shall notice, the accounts differ. The pools in the Tivy are very generally allowed to be well stocked. The Ithon, though lauded by some writers, does not appear, from Captain Medwin's account given of it in the *Angler in Wales*, vol. i., to be so favourable for sport as some waters already mentioned. According to him it appears to yield chub principally, with a few eels; but we know some other persons who praise it for its properties as a trout stream. The Wye is devious in its course, but beautiful and romantic throughout. Here are trout, sewin, and salmon in plenty; and the Bengalen pool is particularly recommended for trial by most of the fishermen here. It is a vast deep excavation worn through rocks of considerable elevation, but it nevertheless wants the sublimity which both Dove-dale and the Dargle exhibit. It is rich in trout, but its water is apt to be black and muddy from the peat mosses it runs through. At Dovey the coracle may be seen in use, and consequently the poacher's work thrives there.

SUBJECT. 1. *Angling in North Wales.*

3986. *The angling in this part of the principality is also good;* indeed, many consider it superior to that in the southern district. North Wales is reached by any of the ordinary conveyances which take passengers to Shrewsbury, from whence there used not a great many years ago to be a Welsh coach to Barmouth; from which place some anglers hasten to the river Vernieu, where fine trout will try the goodness of the angler's tackle. Here also that universal tempter of the Welsh trout, the coch-a-bonddu, often ridiculously written cock-a-bound, and sometimes cock-a-bundy, is in universal use, and a never failing taker. Merionethshire also now offers its lakes to the notice of the angler, and principally that of Tal-y-llyn. The active angler will not trouble himself to travel round the vast base of Cader-Idris to gain this famed water, but will rather cross the heights by mountain paths before him. A walk of three hours will bring him in sight of this beautiful and extensive lake, where a boat is usually stationed ready for the occupation of any piscatory adventurer who will hire the accustomed attendants, which a few years ago consisted of a man and his wife. We wish here to place on record the liberality of Colonel Vaughan, to whom this lake belonged when we visited it. All hail to his memory! for his noble spirit led him to purchase this aqueous expanse *purposely* to oblige his friends and the public with gratuitous sport. As a proof of its prolific properties, it may be stated that twenty-five brace of fine trout were taken here by one gentleman in two days. The Severn should also command our attention: it is one of our noblest rivers, and throughout its whole course offers a remunerating return for the exertions of the enterprising angler. The salmon taken here are thought to be little, if at all, inferior to those which used to be caught in the Thames, and which then sold at seven shillings a pound, while those of the Severn seldom bring more than eighteen-pence per pound. Indeed we have observed, that it has been a matter of surprise to many that the waters of the principality throughout are not better known, and more frequently visited: here few, if any, restrictions to the sport of the tourist are found; but from the borders of Monmouthshire in the south, to the river Dee in the north, the whole is open before him, without let or hindrance. The inns also, however humble, are usually clean and quiet places of resort; and if luxuries are not numerous, molestations are unknown; and the accommodations, though not first-rate, will serve the purpose of all but the most fastidious. We particularly remember having been most comfortably accommodated at Tan-y-Bwlch, a spot which exhibits Nature as the lover of Nature delights to view her, simple and without disguise. It is in this vicinity that the elevated chain of mountains is found, over which the lofty Snowdon



SNOWDON.

(fig. 567.) rears his head, and seems to frown in awful grandeur on all below. When we saw it, there was no snow to be observed on its summit; but we were told that it was not uncommon for hardy tourists who explored its Alpine heights to find snow even in June and July thereon. The observer of Nature in these wanderings, as he moves farther from the busy haunts of man, is often struck with wonder at the quantity and the variety of living matter he has left behind him, compared with what he

now sees around him: cultivation of the soil and increase of temperature and of food consequent on the close congregating of the inhabitants of populous districts, all tend to encourage animal life: beasts, fowls, and insects, all teem in numbers where human beings thus congregate. Hence it is, that instead of a vast variety of flies, a late fisher in Wales noting their scarcity tells us, that with two sorts of flies only the angler may, and actually does, fish with success throughout the whole season. This account is true, though only in a limited degree, as our lists will show. Some assert that there exist as standards two flies only, which are the coch-y-bonddu or red rough, and the smoky blue, so called; and both are killing flies it is true, one in the early, and the other in the latter part of the season; nevertheless, other native flies are represented and successfully used; indeed, the same gentleman recommends on his own experience a cinnamon-fly, the wings formed from the wing feather of the landrail, and the body of the sandy-coloured fur from a hare's neck, to be mixed, however, with orange-coloured mohair for the body. Mr. Hofland, however, who was known as an excellent angler, and as we believe a writer of undoubted veracity, notices the flies used in these localities in the spring season as the March-brown, the stone-fly, Edmondson's Welsh fly so called, the hare's ear dun, and the iron-blue. He also tells his readers, and the truth of which we can vouch for from our own experience, that the trout in this part of Wales are in general, but more particularly in the Usk, much earlier in season than in most other Welsh districts. The following account of this part of the principality, derived in some measure from Mr. Hofland, as well as from our own observations, may not prove uninteresting to the reader who has not travelled thus far.

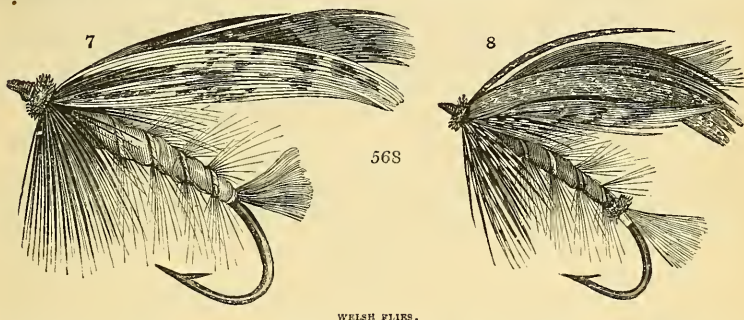
3987. *The seat of Sir Watkin Williams Wynn, Bart.*, with its surrounding beauties and works of art, all worthy of admiration, will be first mentioned. Among these, after the seat itself, which forms the pride and boast of that part of the country, we would particularise as an object of great interest the grand aqueduct, Pont-y-Cyssyllte, which stretches itself across the river Dee; and, as may be supposed, the views from this elevated work of art are equally grand and interesting;—Langollen's Vale and its pretty town, which, it will be remembered, furnished an enchanting retreat to some ladies not more respected for their station and talents than for their private worth and charitable dispositions. In this district also is situated the well known inn at Capel Curig: a more interesting spot to the tourist in general, and to the angler in particular, can hardly be imagined than here presents itself. We venture to assert that very few if any places in the whole principality can equal this in point of interest. In this vicinity is seen a fine waterfall, known as Rhaider-y-wennol, and which it is most probable has already been passed by most tourists in their approach to Capel Curig. All around this locality is one expanse of grandeur and interest; and we have but to step into the garden of the inn to view the lakes Lynn Elider Vaur, and Lynn-Cerig or Curig, with their surrounding scenery. In this vicinity the river Llugwy also is found, in which the visitors to this neighbourhood procure excellent fishing; indeed, at the time we allude to, the sport was particularly good, the water being in the best order, in consequence of a recent fall of rain. Mr. Hofland, who was there at that time, by the use of a favourite fly, named by his friends "Hofland's fancy," killed in one day, as we understand, thirty brace of trout of a small size. The next day the same gentleman took, not from the river, but from the lake above alluded to, twenty-five brace of trout, weighing from half a pound to a pound. These, he informs us, were taken with the March-brown, the grouse hackle, the alder-fly, and the celebrated Welsh favourite called the coch-a-bonddu. This singular name of the most killing fly known here, literally meaning *red with a black end*, has as many diversified methods both of spelling and pronouncing it as there are letters employed in its composition; it, however, deserves all the encomiums passed on it. The Welsh rivers, prolific as they are generally as fishing stations, are nevertheless taxed by Mr. Lascelles with a certain degree of uncertainty, which he appears to find a difficulty in accounting for. We believe he is not altogether wrong; but it is only in degree, as every other fisher in the principality well knows. He says it is remarkable that after a flood, when the water is clearing, and of an ale colour, the fish in the Usk will rise famously, while that those in the Wye and Irvon at not more than twenty miles' distance, under similar circumstances, will not stir an inch. He, however, suggests, as a reason for this apparent anomaly, that after heavy rains the two latter rivers are impregnated with an overflow of sulphurous water arising from the numerous mineral springs which in their neighbourhood abound, which, being in some degree of a poisonous quality, nauseate the fish. The angling in this vicinity is, however, generally excellent, and the most killing flies are known and well defined. The March-brown of Mr. Hofland, better known here as the cob-fly, is not only noted by Mr. H., but is also mentioned by Mr. Lascelles as a fly of excellent properties, and one of the best of the season. These flies are then seen in large flights; indeed, at certain times the water appears perfectly alive with them. He, however, very justly observes, and we ourselves can bear him out in the assertion, that this fly is a perfect camelon in its aptitude to change its colours, and that a very few days only are sufficient to diversify the appearance of its tribe very much. It is now that the capability of the fisher to dress his own flies becomes of much value to him, and gives him a great

advantage over those whose supplies are limited to a certain pattern. This fly is to be dressed, as far as figure goes, with wings nearly upright from the feather of a hen pheasant's wing, and the more dappled the better. A partridge's hackle should be wrapped twice round close under the butt for legs; the body, which is of good size, should be represented by a mixture of yellow camlet and the light brown fur of a hare's ear, about equal quantities of each on a hook (No. 6.). "When this fly comes on the water," says Mr. Lascelles, "the fish instantly flock to the head of the stream, and scarce one out of a thousand escapes." It will also materially assist the diversion to use three of these flies at the same time, but thus diversified in colour: one should be lightly coloured, a second something sadder, and the third should be the exact colour of the natural fly; for, by throwing these varieties gently up the stream, and allowing your mimics to swim down with the other flies, a fish is more likely to be off his guard. For it must be evident that, under such circumstances of plenty, every effort of skill is often required to lure him into the snare. This fly also will always take the largest fish, and it is as great a favourite on the larger rivers as the green drake is on the smaller ones; so that whenever you observe it coming on, you may be very certain that nothing else will succeed. The trout, however, taken by this writer were, as it appears from his account, not in such good season as from their strength in the water, and their eagerness to take the bait, would have led one to expect; nor did the largest of those taken, although sixteen inches long, weigh much more, he says, than a pound and a half. In the year following that from which this account is dated, we also were at Brecon, and heard of his (Mr. Lascelles') exploits in that vicinity, and exactly the same circumstances of disappointment occurred to ourselves; while, therefore, we laud the Welsh localities, we unhesitatingly affirm that the state of the fish, but of the trout particularly, as regards their sporting properties, is irregular and precarious in some rivers—a circumstance for which, as far as our inquiries reached, no satisfactory reason was given. We would always have every trout we took to exhibit much game in his resistance, as well as much energy in his rush at the bait; and when he is taken and landed, we would have him exhibit a bright coating, a taper head, his gills of the deepest red, and his fore parts broad, full, and firm under handling. We would have his fins shining, and exhibiting at their tips somewhat of a golden hue; then, and then only, we should think our labour well bestowed: nor would we fish longer in any water that did not yield such trout as we have described. Again, no other variety of fish would we trouble ourselves to take for taking's sake; or if we did so amuse ourselves, we would throw them into the water again. Fortunately, however, in almost all rivers of the principality, and amongst almost every variety of fish found there, a certain time at which they reach perfection is known to occur; and fortunately it is so ordered by Nature, that the different varieties of fish do not simultaneously reach that perfection in point of time in any locality; neither do individual fishes of one river come into season at the same time with similar fish of other rivers: hence the angler has only to watch these specialties to be always able to take his pastime at a proper date, shifting his locality, so as to be always ready to catch the fortunate period when the water and the fish combine to bid him welcome. Few rivers here are in perfect order until the middle of April; many not until the latter end of it. The Usk, however, here, and the Driffield in Yorkshire, yield seasoned trout much earlier than this, and the fish taken in both these rivers are superior to most met with. The trout of the Usk are often very large, and always very finely flavoured; but it is necessary that the entomology of this locality be familiar to the angler to insure his success. If he inform himself well with regard to the times of the appearance of the different flies, he may fill his creel daily. It will be in vain to enter on a course of fly-fishing here with the greatest superabundance of flies, all most exquisitely dressed, unless they be the exact representatives of the insects that start into life at their proper seasons. Such only raise the trout, and such only will take them; however, in play they may rise to view them. Every week almost makes a change in the native flies here, as indeed is the case elsewhere, though it be less remarkable; and no representation but that which is a facsimile of the fly on the water will engage a fish to *snap the bait*.

3988. *Pass we on to Machynlleth*, which, if it be reached by the mountain heights, is a task requiring strength and nerve, but which, when accomplished, amply repays the exertions. If the most romantic path be pursued, it leads to a deep chasm, which the river Rhydol has, during a series of passing centuries, worn through the vast mass of rock now separated by the continued washing of a mountain torrent that pours down a turbid and discoloured stream. Across this chasm there is, or at least when we saw it was found, a single plank, emphatically called the *parson's bridge*; but whether so named because it was laid by some patriotic clergyman, or that a notion had arisen that no other individual could pass over it than one who had a very full dependence on Providence, does not appear. The wild beauty of the valley of the Rhydol amply repays all the toil of the pedestrian tourist by the soul-stirring sublimity of the scenes on either side, where woody luxuriant masses occasionally hide the mingled waters of the Rhydol and the Monach, and anon, as their branches recede or spread upward, allow a full sight of the flow. The town of Aberyst-

wyth receives much benefit not only from anglers, but also from parties of both sexes, who arrive there, and proceed to the Devil's Bridge, purposely to sketch the truly romantic scenery which presents itself. Indeed, there is little else to do, for the trout taken here, when compared with those to be met with in the Usk and in numerous circumjacent rivers, are not worthy of attention. Did our limits allow, we would take our reader to the Tivy, a gentle and quiet stream, except when swollen by floods. Here are none of those wondrous exertions made by the salmon in what is known as their leaps, and seen at Newcastle Emlyn, in Carmarthenshire. Here, on the contrary, amenity is the grand feature of the rivers generally, though not universally; but whether of one or the other kind, we now quit them with extreme regret, and with a strong recommendation to every lover of Nature, be he or be he not of the *gentle craft*, to visit and explore the beauties of this quiet though romantic country. It presents no obstacles; it may be visited by those who have more curiosity than cash; and may be explored from end to end for a few shillings a day by a pedestrian, while the more wealthy tourist may solace himself with the opportunity of doing much good among a very deserving race by a moderate addition to the sum.

3989. *A description and representation of some of the Welsh flies used in salmon fishing* must prove acceptable to the angling tourist. We have already introduced cuts of a few esteemed flies used by the Scotch salmon fishers; we now also offer four representatives of the most killing flies used in Wales, observing that two of them head our subject, and that the other two wind it up (*fig. 568.*).



WELSH FLIES.

3990. No. 1. *Wing.* — Whole feather of the bittern. *Body.* — Blue dun mohair, or wool. *Legs.* — Dun hackle shouldered with a coarse dun feather. *Head.* — Ostrich feather. *Tail.* — Bittern's feather. *Hook.* — Large.

3991. No. 2. *Wing.* — Heron's or kite's feather. *Body.* — Dirty yellow mohair, or wool. *Legs.* — Greyish dun hackle shouldered with guinea-hen. *Head.* — Green peacock's feather. *Tail.* — Scarlet mohair. This fly is sometimes dressed with and sometimes without gold twist, according to the nature of the water for depth, clearness, &c. If deep and at all discoloured the fly cannot be made too conspicuous. *Hook.* — Middle size.

3992. No. 3. *Wing.* — Bittern's feather. *Body.* — Orange mohair, or wool. *Legs.* — Red hackle shouldered with a red and black hackle. *Head.* — Peacock's feather. *Tail.* — Crimson mohair, with or without golden ribbing. *Hook.* — Middle size.

3993. No. 4. *Wing.* — Of a mixture of feather of bittern, brown mallard, teal, and heron. *Body.* — Light olive mohair, or wool. *Legs.* — Ginger hackle shouldered with grouse feather. *Head.* — Peacock's feather. *Tail, or whisks.* — Yellow mohair, with or without silver twist. *Hook.* — Moderate size only.

3994. *On the sizes of the hooks on which salmon flies are dressed* it may be remarked, that among many anglers they are known as large, middle, and small, and this distinction is perhaps the best, if conventionally understood, which unfortunately is not the case. Thus in Dublin (Phillips's) the large sized hook is No. 1., the medium size is No. 7., and the small No. 10. In Kendal, on the contrary, the large is No. 16., the middle No. 15., and the small No. 14. In Carlisle the large hook is numbered as 0 0 0, the middle as 0 0, and the small as 0. We must now bid adieu to Wales, a country endeared to us by many, many interesting ties, and numerous vivid remembrances, commencing with our early days, and continued down, by sundry visits and explorations of its varied beauties of scenery, to later times. As to the quality of its sportings, our efforts, although intended to portray them favourably, fail to give them their due colouring. Travellers who do not enter fully into them cannot of course be expected even to do common justice to the sporting character of the localities he visits: thus one Welsh tourist we met with abused Wales, because he could not fish her lakes without putting himself to the expense of hiring a boat to traverse their surface, unreasonably expecting to find that the fish would come to him,

instead of his approaching them. We asked a complainant of this kind, whether he had tried his tackle from the banks in the evening as well as the morning? to which his reply was, that it was too fatiguing to fish all day, evidently unaware that in extensive lakes the fish leave the deeper parts towards the evening, and then may be taken from the banks. In lake fishing in Wales it is particularly necessary to keep this in mind; but we would suggest to any piscatory tourist going there, that at each new locality he visits he should immediately seek the friendly aid of some one of the numerous fishers who practise their art for the benefit of themselves and families. A moderate gratuity will open the heart of such an one, and purchase his best endeavours to make the applicant as well informed as himself: but take care to make him aware you are not going to permanently settle in his locality, for his fears of the consequences may either seal up every avenue to information, or probably the instruction given may do you more harm than good.

3994a. *This, the angling portion of our new edition, would not be complete did we not give a list of the modern local salmon flies used in the Welsh rivers. They are as follow:—No. 1. Body, orange pig's hair; legs, two yellow-dun hackles, struck up from the tail to the shoulder; wings, light brown-yellow turkey tail-feather; tail, a bit of red ibis, and a small widow's crest-feather; head, orange-coloured wool. Hook, No. 3. This fly is only fit for full water, clearing after a flood.—No. 2. Body, turbid orange wool; legs, a dun hackle, dyed the colour of the body; wings, a light, spotted, turkey tail-feather, dyed yellow; tail, red toucan, and brown turkey tail-feather. Hook, No. 5. The two following flies are excellent ones.—No. 3. Body, dark orange worsted, or pig's wool; legs, two dark-dun hackles rolled up from tail to shoulder, round which a yellow-green hackle; wings, dark brown spotted turkey tail-feather; tail, neck feather of the golden pheasant, drawn in short. Hook as before.—No. 4. Body, dark orange wool ribbed with silver twist; legs, two grizzled-dun hackles from tail to shoulder; wings, two body feathers of the bittern; head, green peacock sword feather, one or two fibres of which are to be left hanging from the butt of the wings; tail, short red and blue macaw feathers. Hook, No. 6.*

3994b. *The four following flies are great favourites in Wales, and are known there by the name of "fern flies." They are dressed thus:—No. 1. Body, yellow worsted, mixed with a small quantity of light buff; legs, dun cock's hackle; wings, pea-hen's back or rump feather, dyed yellow. Hook, No. 5., and tail crimson worsted.—No. 2. Body, dark buff, or salmon-coloured wool; legs, dun hackle dyed olive; wings, two bittern feathers dyed yellow; tail, mallard dyed yellow. Hook, as before.—No. 3. Body, deep yellow, mixed with a little orange worsted; legs, dun hackle, dyed yellow; tail, grey and yellow dyed mallard feather, mixed; wings and hook, as before.—No. 4. Body and legs a sooty yellow; tail, widow's crest-feather; wings, as before, and hook, No. 6. The feathers for the wings of these fern flies are dyed thus:—Dissolve in a pint of boiling water an ounce of alum; steep in it the feathers for three or four hours. Boil in the same quantity of soft water for half an hour, half an ounce of fustic, and the same quantity of turmeric. Remove the feathers from the alum water, and immerse them in the yellow dye, and they will soon assume the required colour.*

3994c. *Of late years, large palmers have been successfully used in Wales for the capture of salmon. The following are the three best patterns:—No. 1. Body, very long, of orange wool, ribbed with gold tinsel; orange tail; two red-dun hackles, struck from the tail to the centre of the body, and two dark blue-dun hackles from that up to the head. The whole to be dressed on two hooks, whipped tightly together, back to back, the barb and bend of the upper hook to project upwards from the centre of the body of the palmer. The hooks to be two number fives or sixes. This palmer should be used in full water after a flood.—No. 2. Body, black ostrich harl and black hackles from tail to head. Hooks, as before. Fit for pools and clear water.—No. 3. Body, light blue-dun wool, over which hackles of the same colour. Hooks, No. 7. Good in clear water towards evening. The above local Welsh flies and palmers are after patterns dressed by Mr. W. Fliin, fishing-tackle maker, of Worcester, and the inventor of the flexible minnow. He has much experience of the rivers of South Wales, and the above are his favourite flies. It is a singular fact, that the great majority of Welsh salmon flies are exceedingly plain, nay, ugly-looking things. It would be quite useless to try them in the Irish or Scotch rivers; and *vice versâ* the gaudy flies of Ireland and Scotland would be useless in Wales.*

In conclusion, we exhort the angler to regard the *North*, as the proper *home* of the *Salmonidæ*; and to regard *mountainous* regions, whether Alps or Apennines, as having a similar troutly character. The motto of the flyfisher should be '*Exeelsior*.' Up the Mountain burn, even to its source: and away to the farthest Orkneys must he speed if he would enjoy to the full the delights of this charming recreation! And if his aspiring devotion to the sport cannot be satisfied with the grayling of the Peak, nor with the Burn trout of Wales and Scotland, nor even with the salmon-trout of the Orkneys, let him explore the rivers of *Norway* for the salmon, and satisfy the cravings of his spirit with fly-fishing in its lordliest and most imposing aspect!

PART IX.

COCK FIGHTING.

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COCKFIGHT.

3995. *In nothing, perhaps, is the improved tone of society more strongly marked than in the suppression of the once generally popular sport of cock-fighting. It is only as chroniclers of the past that we retain it in our pages, the legislature having stepped in to abolish what better taste was fast repudiating.*

CHAP. I.

COCK FIGHTING.

3996 *Cock fighting.* "If the rust of time can hallow any sport, that which we are now entering on is in full possession of this precious bedeckment. It is indeed so old, that we hardly know from whence to derive its origin: Asia, however, has the credit of first fostering it, and it seems to have been cultivated by the natives among their earliest games. The first records of China note it. In Persia it was early encouraged, in conjunction with hawking and quail fighting; nor was it to be wondered that, as man became belligerent, he would, in order to extend his conquests, commence his education by observing the offensive and defensive operations of animals, thereby the better to regulate his own. When Themistocles was engaged in warfare with the Persians, he was struck with admiration at the bravery and determination displayed in the battles between the cocks of that people, which was such as to occasion him to exclaim to his admiring army, 'Behold, these do not fight for their household gods, for the monuments of their ancestors, not for glory, not for liberty, nor for the safety of their children, but only because the one will not give way unto the other.' This so encouraged the Grecians, that they fought gallantly, and obtained the victory over the Persians; upon which cock fighting was, by a particular law, ordained to be annually practised by the Athenians. The inhabitants of Delos were great lovers of the sport; and Tanagra, a city of Boeotia, the Isle of Rhodes, Chalcis in Eubœa, and the country of Media, were famous for their generous and magnanimous race of chickens; and it does appear that they had some peculiar method of preparing the birds for battle. Cock fighting was an institution partly political at Athens, and was continued there for the purpose of improving the seeds of valour in the minds of their youths. But it was afterwards perverted and abused, both there and in other parts of Greece, to a common pastime and amusement, without any moral, political, or religious intention, as it is now followed and practised amongst us." (*Johnson's Sporting Dictionary*, p. 137.) It was a natural transition that this sport should pass from the Greeks to the Romans, who were known to have cultivated cock fightings four hundred and fifty years before the Christian era. How it became introduced into Britain does not appear in detail, but it is enough for us to know that it can be traced back to the twelfth century, although it would seem to have been considered at that time as rather a childish sport. "Every year," says Fitzstephen, "on the morning of Shrove Tuesday, the schoolboys of the city of London bring game-cocks to their masters, and in the fore part of the day, till dinner time, they are permitted to amuse themselves with seeing them fight: the cockpit was the school, and the master the controller and director of the pastime." In the reign of Edward the Third, cock fighting became a fashionable amusement; it was then taken up more seriously than it formerly had been, and the practice extended to grown persons. However, even at that early period, it began to be productive of pernicious consequences, and was therefore prohibited by a public proclamation, in which it was ranked with other idle and unlawful pastimes. But notwithstanding it was thus degraded and discountenanced, it still maintained its popularity; and, in defiance of all temporary opposition, has descended to modern times. Among the additions made by Henry the Eighth to the palace at Whitehall was a cockpit, which indicates his relish for the pastime of cock fighting; and James the First was so partial to this diversion, that he amused himself in seeing it twice a week. Exclusive of the royal cockpit, we are told there was formerly one in Drury-lane, another in Jewin-street, and a third existed in Shoe-lane, if the following story be founded on fact:—Sir Thomas Jermin, meaning to make himself merry, and gull all the cockers, sent his man to the pit in Shoe-lane, with a hundred pounds and a dunhill cock, neatly cut and trimmed for the battle: the plot being well laid, the fellow got another to throw the cock in,

and fight him in Sir Thomas's name, while he betted his hundred pounds against him. The cock was matched, and bearing Sir Thomas's name, had many bets laid upon his head; but after three or four good brushes, he showed a payre of heels. Every one wondered to see a cock belonging to Sir Thomas cry *craven*; and away came the man, with his money doubled." (*Sports and Pastimes*, p. 248.) Strutt is very severe on the Welsh main, which he justly condemns as an abuse of a sport already sufficiently stigmatised by some. As to Good Queen Bess, as she is sometimes familiarly called, but never as we believe with derision, for if she had her peculiarities she also had her virtues, no true sportsman, at least, will let a dog bark at her, for if she is not stated to have been particularly disposed either to patronise or to check cock fighting, did much better, by leaving her subjects to their own discretion on this point. In all the more active field sports, which do really become us as a martial and enterprising people, she was a patron and a persona participator. It was in her time that Roger Ascham wrote his well known treatise on the subject; and it was about this period likewise that cockpits were built in Drury-lane, Gray's-inn-lane, and Jewin-street. It has been supposed from the oft-quoted words of Lord Byron,

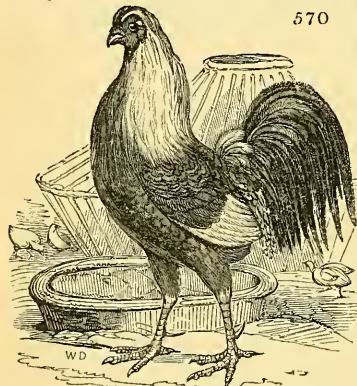
"It has a strange quick jar upon the ear,
That cocking ———."

that he disapproved of this sport, and that with his accustomed causticity he therefore disparaged it. In early life we were on terms of intimacy with Mrs. Massinberg, of 16. Piccadilly, as the numbers then ran: she was a relative of Lord Byron, and whenever he left college on a visit to London he used to domesticate at her residence, and there we also on several occasions met him, and enjoyed his conversation, which, as might be supposed, led him to remark on the scenes he met with in London; and as our pursuits among animals were well known to him, and much interested his inquiries, so there were none at that time prevalent that his capacious mind did not mention, and make inquiries about. But while we own we never heard him eulogise cocking, we can conscientiously aver we never heard him utter a word against it, although we have a faint remembrance of being told by him that he had on a previous day visited a cockpit, and that he inquired of us, also, whether we had seen the same. Beyond this we affect to know nothing of Lord Byron's sentiments on cocking; but it may be supposed from his promptitude at that time in "speaking his mind," that had he then conceived any disapprobation of the sport of cocking, he would have stated it. If it were not that every sentiment known to be entertained by this truly eminent writer is a matter of record with the public, we should not have introduced this seemingly irrelevant matter under any minor consideration. We do not say with Pierce Egan, that "The subject of cock-fighting has been too long before the public to require any defence from our hands; but shall use his lordship's words as the best answer we can give to those persons who are inclined to be a little too fastidious respecting this once popular sport:—

'Some talk of an appeal unto some passion,
Some to men's feelings, others to their reason;
The last of these was never much the fashion,
For reason thinks all reasoning out of season.'

SECT. I. The Natural and Sporting History of the Game-cock.

3997. The *gallus* or cock (*Phasianus Gallus* Linn., fig. 570.) and his family play a very important part among the sheltered race. Strange to tell, he is united in the Cuvierian system with the pheasant breed.



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GAME-COCK.

We however are fully prepared to agree with that great naturalist, Temminck, who separates the cocks from the genus *Phasianus*. With much judgment, at least as we think, he does not consider that the pheasant characters apply to the gallinaceous birds for the following reasons:—He regards the most striking of the characters of the pheasant as little applicable to the majority of cocks. The tail feathers of the former are long, narrow, and vaulted, the two intermediate quills being constantly more elongated than the lateral: their cheeks also are covered with a tissue composed of small feathers exceedingly short, and indeed so much so as to resemble velvet; to which he might have added, the distinguishing features of the crown of the head being naked, and the skin raised into a fleshy elongation, called the comb, as well as by a no less distinctive peculiarity, that of the elongation of the skin of the lower jaws into portions hanging down, called wattles. The pheasants are likewise much less hardy than our fowls, and it is only by the utmost care that they can be brought to breed in a state of domestication, whereas our game fowls breed with us readily.

3998. M. Temminck is of opinion, that the races of our domestic cocks sprung from the Jago cock (*Gallus giganteus*), a species native to Sumatra, and from the *Bantaina*, another primitive race found in the forests of Java. Somini conceives that he has heard the crow and other notes of our domestic fowls in the forests of Guiana. It however gives weight to this placing of our breed of the game-cock, that is in the Museum of Edinburgh, and was procured from Sumatra. With regard to the difficulty that has been experienced at coming to any satisfactory determination on the true placing of the game-cock in ornithology, we can hardly wonder at it, when we regard the disposition that is observed in this breed to what is called "sport into varieties." Some have ample crests on their head, which fall down in graceful curves over the head, face, and eyes. Another is the Dutch pencilled fowl of a pure white, distinctly spotted with black. Another singular variety is seen in the rumpless or tailless cock, and in the *Gallus Morio*, which has the periosteum or outer covering of the bones black, while the flesh is white. The Friesland cock is well known by his feathers, which all grow in a contrary direction to the usual one. The bantams, so familiar to us, and so admired, are derived from a towai in Java. On them we have only to point out the proof they set before us of the power of art in interfering with nature. Formerly these birds were seen feathered down to the toes, now we see them very minute in size, and as clean limbed as the game-cock, which alteration was brought about by art.

3999. The internal conformation of the game-cock presents some specialties thus noted by Mr. Griffith:— "The stomach of the cock is singularly muscular, and furnished internally with a tunic almost cartilaginous. The action of the muscles produces a friction in the interior of the stomach, which rapidly comminutes not only aliments of every description, but will in a few hours wear down the surfaces of globes of glass, and reduce the whole to powder; triangles too, of glass, even with greatly acerated points, are blunted in a very little time; nay, even points of steel, implanted in a ball of lead, are equally worn down by this violent action of the muscles. In the works of Spallanzani, the proofs of this may be found in the account of the various experiments performed by that philosopher on the digestive organs of the cock. Properly speaking, the cock has three stomachs: the first is the gizzard, the second is observed a little lower down in the dilatation of the

œsophagus, and the third is the muscular pouch which we have just alluded to. This last stomach, according to Bechstein, is composed of four principal muscles, which produce the most active mechanism on this viscus. The intestinal canal measures more than five times the length of the bird, and the two cæca are six inches long, and take their origin at the spot where the colon is united to the ileum. The testes of the male are of greater volume, in proportion to the body, than in any other bird. The trachea is widened a little, funnel-wise, towards the upper larynx; it narrows sensibly towards the lower larynx, which is very much compressed. The lateral parts of this last are furnished with a single membranous piece, which is not supported by cartilaginous ridges; the cartilage, which traverses the larynx internally, instead of being soldered as in the turkey, in the middle of the last demi-ring is suspended to two triangular pieces attached under the anterior and posterior parts of this ring. The bronchie have not entire rings, and their internal part is furnished with a membrane. The entire trachea appears capable of being elongated or shortened in a very sensible degree, and the lower larynx is equally capable of being compressed and dilated according to the sounds which the animal wishes to produce. It is probable that the very shrill tone of the cock is produced by this compression of the lower larynx. In the interior of the top of the trachea, immediately at the aperture of the glottis, there is a very slight protuberance, but no socle, or osseous triangle, as in the paxils, the hocos, and penelope." (*Animal Kingdom*, vol. viii. p. 182.).

4000. On the breeding of fowls generally we have not room to enlarge, but we would refer the inquirer to Mr. John Lawrence's excellent work on the subject, under the title of *Mowbray's treatise on the Breeding and Rearing of Domestic Animals*. On the subject of breeding game fowls we may probably drop a few hints. Already we have offered some description and some illustrative cuts, exemplifying the processes carried on in the egg from its accumulation within the mother as a mere animal mass to its impregnation and vivification through the agency of the cock, to its expulsion from the shell as the living bird by the process called hatching. It is worthy of remark, that in this order of birds the young can search out their food and eat it as soon as they emerge from the shell. It is ordained therefore by Nature, that the number of eggs which each mother lays is exactly that which she can cover, and keep up sufficient heat by her body and wings to hatch or vivify. How exactly Nature, we may here remark, suits the supply to the wants of her animals: thus, with most other birds the number of eggs does not often exceed four or five, not because the females of those birds could not cover a greater number, but being obliged to support these young some time after they are hatched, they would not be able to do it were their offspring more numerous. March and April are the months our most experienced breeders of game fowls choose for that purpose, and the selection of a healthy spot is important, the warmest and driest soils being the best adapted to the purpose, and consequently the cold and the damp are the worst, producing cramp, roup, and other injurious attacks: cold, however, is less to be dreaded than damp. Gravely soils suit them: therefore, when a clayey and boggy one is chosen they seldom thrive, but, on the contrary, die off before they reach maturity, spite of every medicament or change of food. Where, however, the attempt is made, counteract the effects in the following manner:—Fence off a considerable area with a tolerably high fence; and having so done, give it a thick ground coating of brick rubbish, surmounted by a layer of chalk and a superstratum of gravel. Around this area, let there be other plots made dry also by under-draining, &c. which should be sown with some of the seeding grasses, as trefoil, wild clover, spurry or stargrass, all which, but especially the two last, Mowbray says, "are particularly salubrious to poultry." Within this inclosure let the poultry houses be erected, and if possible facing the south; by following which course, the evils of an unfavourable soil may be avoided. We again remark on the prudence of beginning in time, therefore put up the breeding hens and the cock in January. March chickens, says a breeder, "seldom have the roup;" however, this malady will appear, and is more likely to take place in very high bred birds than in those not so highly bred. Guard also against frost, which attacks the chickens in proportion to the extent of that high breeding in the parents, which the owner so anxiously strives to obtain. We will take it for granted, that where an early brood appears, the breeder will not allow the young gentry to walk abroad with mamma if any thing like frost is in the air. Both mother and chicks indeed in such cases are best shut up. On the contrary, when the sun shines out during February even, and no north or east wind is blowing, they may run abroad in the middle of the day for half an hour, or even an hour, if the sun is out. The corn given to the young cocks should be of the very best kind, the water also must be equally so. Of the corn, we will observe in the words of a cocker, "It should be of the very finest quality and of the easiest digestion; that which has been housed the ripest presents itself as the food best adapted to the whole feathered tribe, though the habits of some lead them to devour animal food, fish, and other substances. But what is the condition of such birds? what their propensities? We need scarcely bestow a single thought upon the appropriate answer, and in that answer will be found the impolicy of bringing up game chickens as of training game-cocks upon *raw meat*, according to the general practice (it is apprehended), when worms are obtained with difficulty. Much better would it be to convert the meat into *gentles* by means of artificial heat, in the same manner as anglers procure such worms by the heat of the sun and the blowing of flies. For this purpose (seeing that the worms would be mostly required early in the year), some large blow-flies may be put away in autumn, and be raised from the dormant state by heat, so as to impregnate (or blow) animal matter in abundance; nor will they readily leave the genial retreat provided for them, though left at large, if they are sheltered from the action of the boisterous winds that prevail early in the year. Exercise and good water appear to us essential requisites in training cocks; and the walks provided for them should possess the means of obtaining both. As, in attaining the first mentioned, frequent runs would be required, the advantage of a field adjacent would mainly conduce thereto, so also conveniences should be provided for separating the quarrelsome from each other. This latter more especially, since the practice of permitting the stags and younger chickens to spar occasionally will improve their wind, try their courage, and reduce the quantity of fat which gathers round the gizzard, the heart, &c. in highly fed animals; besides that, when these bouts are over, if one does not give in or run under the other, they will be always at it, and must be separated. Wherever the convenience exists of making a small streamlet of fine clear water flow near the pens, let this advantage be adopted in preference to using shallow pans that require frequent filling, and which soon get muddled by the fowls walking over them; and the readiness of attendants to replace clean water instead of foul, seldom keeps pace with the spoliation and wants of the game animals, which stand in need of much drinking." (*Sporting Annals* for April, 1823, p. 283.) We, however, thus far venture to offer hints on *chicken* rearing. But when the important business of *training* commenced, then all was behind the curtain, and then it was that a more notable personage stepped in and began to play his part, which was most of it *sub rosa*.

4001. *Cock-feeding and training* are words of synonymous import. A professed cock feeder and trainer who became fortunate in the birds he attended was a much greater personage than many still greater persons think; and we are not sure that Joseph Gilliver, publicly proclaimed in the *Sporting Magazine* for November, 1834, "as the most celebrated cock feeder England ever produced," would have changed his honours for those of General Havelock himself. The first main, we are told, which Gilliver ever fought in public was at Coleshill in Warwickshire, and the last was at Preston in Lancashire, in 1830. During his life he fed principally for Lord Mexborough, Mr. Featherstone, Mr. White, General Yates, Mr. Sitwell, and others too numerous to mention. His chief opponent was Potter, who was feeder for that veteran sportsman the late Earl of Derby, whose attachment for the sod continued unwearied, and who was seen enjoying to the very last his favourite amusement with all the zest of a younger man. The largest sum ever fought for in England was a main of orly seven battles for 1000 guineas a battle, and 5000 guineas the main. This was fought at Lincoln, and won by Gilliver, who was fortunate enough to gain five out of the seven battles. At Lichfield, Chester, Manchester, Newton, Oxford, and Preston, he fought great mains, and generally with success. The last few years of his life were spent in a neat cottage in his native town, which he built himself from the produce of his ability in the profession to which he was devoted, and in which he was unrivalled. He died in 1833, in his seventy-fourth year." (P. 53.)

4002. *The term feeder*, as connected with cock fighting, by no means meant the mere provider of food for these birds; on the contrary, it had a much wider interpretation, as will be seen by a reference to *Johnson's Sportsman's Dictionary*, art. COCK FEEDER, where it states, "A cock feeder to be a person whose occupation it is to collect, handle, and feed a pen of cocks, to fight such main or hatch as may be made or agreed on by those who deposit the battle money, and are called the masters of the match. These find or procure the cocks, of which the feeder takes charge; and to his judgment is submitted the entire management of selecting, rejecting, feeding, physicking, sweating, sparring, weighing, cutting out (alias trimming), and bringing his bag and cock to the pit; where, upon delivering it to the setter-to, his function ceases in respect to that particular cock, till death has sealed his disgrace, or success proclaimed his victory." (P. 143.) The cock feeder first provided each of his cocks with what is termed his "walk," i. e. a parading ground. This he did until deeming him fit to display and to quit walking under his sire, who in his novitiate not only cherished and protected him, but initiated him also into the first principles of defence and offence. This separation, called *taking up*, usually occurred when the juvenile was about six or seven months old. Previous, however, to this, these young birds were subjected to certain operations deemed essential by the fancy, and not without reason. The boxer entered the ring divested of his upper garments, as the cock, ere he entered his *walk*, was deprived of his comb and gills, and received sundry marks about the head and feet. One of the most important duties of the *feeder* was to determine on the growing condition of the cock, and his aptitudes, from the time of his "walking" until he entered the cockpit. If he got "below the mark," he would not be nimble enough to avoid the spur of his antagonist, nor, instead thereof, to deal him a deadly blow. It was the general look of the bird, his saucy bearing, his litheness, the firmness of his flesh, the healthy redness of his rump, the brilliancy of his eye, and the powerful contractions which both his wings and legs made when he was undergoing the feeder's handling, which bespoke his condition.

4003. *The matched cock*, like the prize fighter among ourselves, exhibited the best condition, as well as a settled pugnacity, so strongly marked as to say, I will either conquer or die. To bear out these promises, his fighting points should be as prominent as those of the best pugilist. He must have an erect gait, and a towering loftiness of carriage, but united with sufficient flexibility of limb, with a head rather pointed than coarse, a beak moderately crooked and stout, a neck strong, and of sufficient length, so that if his antagonist fight principally at the head, it may be difficult for such antagonist to reach it, which will give him much advantage in uncovering his enemy's weak points, and securing his own from harm. The best judges are not fond of a sharp breasted cock, although we are assured by one of the fancy that some of the gamest fowls he ever handled were keel breasted. If the objection against this formation be valid, it must arise from the circumstance that it bespeaks a falling off from the due proportions of the pectoral muscles, by which the powerful efforts of the wings in giving effect to the blow which inserts the armature, whether of silver or of steel, into the vitals of the antagonist are impeded. Thus also the broad expanse of chest of the boxer, when it exhibits his muscular masses, is hailed by the bettors in his favour as an earnest how effectively he is likely to deal his blows, or, as the fancy would express it, "how handsomely he would handle his mauls." A cock's longer points, as his thighs and legs, should also be so marked as to attract attention; the former for being very muscular, and the latter for their length and strength, terminating in broad, thin, sinewy feet and long claws.

4004. *When a main of cocks was to be fought at the Royal Cockpit, Westminster*, a match-bill was presented, which contained all the colours of the cocks engaged on the occasion; by which it will be seen that the lightest weight specified is three pounds nine ounces and one-quarter; and the heaviest, four pounds eight ounces and three-quarters. We believe four pounds ten ounces was the maximum weight allowed in match fighting; or, as one of the fancy had it, "all beyond this are excluded by all the match makers from fighting within the article;" a bird to be a bird fit for the white bag, the trimmed wing, the mat, and the silver spur, must be high on the leg, light fleshed, and large boned; but still no more than four pounds eight or ten ounces." We hardly need affect to inform even the mere tyro that cocks fought either in steel or in silver spurs. Colour among a few breeders was thought important, but many more considered that as a good horse may be of any colour, so likewise might a good cock. The lighter colours were avoided; we have heard a cock fighter say he never saw either a white or dun bird good for anything but to run away. Hence, we suppose, originated the term for cowardice being that of "showing the *white feather*." Gray, yellow, or red, with a black breast, were very favourite colours.

4005. *To become enamoured of this sport* we can readily suppose to be an easy matter for vast numbers. The late Lieut.-col. Mordaunt, well known as a sportsman of much spirit and enterprise, was a great zealot in cocking, and took vast pains in the improvement of the game birds. Unfortunately for this amateur he heard that the game-cocks of India were larger, and even more pugnaciously inclined than our own breeds; which idea was in all probability strengthened from reading the following observations of a celebrated naturalist:—"In China, India, the Philippine Islands, and all over the East, cock fighting is the sport and amusement even of kings and princes. It is the opinion of many that we have a bolder and more valiant breed (of cocks) than is to be found elsewhere; and some, indeed, have entered into a serious discussion upon the cause of so flattering a singularity. But the truth is, they have cocks in India as bold, if not bolder, than ours; and, what would still be considered as more valuable among cockers here, they have more strength, with less weight. Indeed, I have often wondered why men who lay two or three hundred pounds upon the prowess of a single cock, have not taken every method to improve the breed. Nothing, it is probable, could do this more effectually than by crossing the *strain*, as it is called, by a *foreign* mixture; and, whether having recourse to the wild cock in the forest of India would not be useful, I leave to their consideration." "The colonel resolved to put the truth of such assertions and observations to the test: he resolved, in fact, to transport to India some English game-cocks, in order to try the courage of the foreigners in their own country, that they might not run the risk of losing this valuable quality by a removal to England. Lieutenant-colonel Mordaunt accompanied his cocks to India, where he witnessed their defeat; and when he returned to his own country, I am not aware that he ever succeeded in improving the native blood. Be it known however, that this gentleman was kind hearted and generous, and expended very considerable sums in attempts to improve the condition of the lower classes in his own neighbourhood. He endeavoured to introduce the silk manufacture in this part of England; and though his efforts were not crowned with success, the spacious building which he erected for the purpose, long continued a mouldering monument of his public spirit and generous disinterestedness." (*Sporting Annals*, November, 1827, p. 237.) This extract alone would be sufficient to convince the reader how infatuating this sport can become to some persons. There is excitement in it from beginning to end; from the handling of the favoured eggs to be placed under the well known careful hen, to the time when the young chicks start through their shelly casement into open day. How watchfully they are guarded, and how the assistant prepares the food best adapted to their state! How they are now watched, and how their pugnacious attitudes glad the eyes of the sanguine breeder, who sees in the sparring forms which the younglings amuse themselves with signs of future prowess, and game determination to hold out until death or victory! Such, we presume, were the stimuli that urged on the breeder, and carried him full of hope to the battle-field—we beg pardon, to the cockpit boards. It must have been an interesting sight to see all these manifestations in some of our greatest enthusiasts in the sport; such, for instance, as Colonel Mordaunt, lately noted, and that amiable nobleman the late Earl of Derby.

4006. *The management of game fowls*, like every manipulation or employ entrusted to the lower classes, became an arbitrary one, dependent on some olden methods handed down from one generation to another. It was fixed, and could not be diverted from its course except by very powerful agencies; hence, instead of being rational, it was empirical; and instead of being open to comment, and thus open to amendment, it had an impenetrable veil of mystery thrown over it too dense to be ever penetrated by reason or experiment. Game fowls are known from others by many distinguishing marks. Their coloured feathers bear a predominant portion of a rich red: their size is inferior to the coarser varieties which grace the farm yard, while to the symmetry and delicacy of their limbs is superadded a critical mechanical formation that adapts them to offensive operations on others, or furnishes them with the means of warding off those attempted on themselves. This

Disposition to pugnacity is inherent in them, so as to make the task of rearing them any thing but pleasant; for it shows itself at very early periods of their growth, and blinds very many of them. This aptitude is so great, that it appears almost equal in the half breeds also, which prevents this race from being much cultivated. However, this irresistible attachment to fighting among themselves has certainly furnished the cock-pit amateurs with their best defence against the tax of cruelty, and the more this natural pugnacious predilection is taken notice of, the more it will appear that if these birds are kept, they must be allowed to fight. It is, in fact, an irresistible passion; deprive them of it, and misery assails them. There are innumerable philanthropic admirers of animals abroad in the world, but there are but few who have had the hardihood to openly and personally attack those who flagrantly commit unnecessary cruelty on animals. One of the oldest amongst us of this class was Mr. John Lawrence, lately deceased at an age, as we believe, nearly if not quite ninety years. This gentleman has all his life proved a staunch advocate for humane treatment towards animals, and proved a determined enemy of cruelty towards them in any shape. What does he say on this subject in his treatise on *Rearing Domestic Poultry*? "Philanthropists are in the habit of declaiming much against the practice of cockpit battles; but, on reflection, the cruelty of that sport will be found among the least wherein the feelings of animals are concerned, since fighting in the game-cock is a natural and irresistible passion, and can never take place against his will; and since those engaged in regular combat upon the arena would do so voluntarily and with equal ardour did they meet in the desert. Another and similar mistake is the supposed additional cruelty of arming the heels of the cock with steel spurs, which, on the contrary, conduces to shorten the period of their sufferings." (P. 13.) Our own opinion of cocking coincides very much with that of Mr. Lawrence. We neither encourage it, nor do we rail at it to show our sensibility: were the birds forced to the task, we should think much worse of it than we do; but when we find this pugnacious disposition implanted by Nature, we cannot readily fancy ourselves wiser than this universal mother. We, however, were never ardent admirers of the sport, as must be apparent when we are enabled to assert we never were present at any matchings of cocks except when, as an officer in the North Gloucester Militia, quartered at Drogheda, under the command of Colonel Kingscote, we saw some matches got up among the officers of the garrison. With these exceptions we know nothing personally of cock fighting. We, however, claim no merit on that score, for the reasons adduced. If, therefore, there be any great defects in the clearness of our details, or the spirit of our descriptions, we hope they may be attributed to the right source, our having had neither the time nor the inclination, since then, practically to inform ourselves on the subject. Nevertheless we do hope, that what we have already gleaned from other sources will yield the reader all the necessary information to satisfy his curiosity, more especially now that it only ranks among the sports that have been. Pierce Egan has an amusing and clever article on the subject in his *Book of Sports*. Mr. Johnson likewise, who was an excellent compiler, gives a clever touch of his craft in his *Sportsman's Dictionary*, art. COCKING. Our own experience on this ancient sport is but small: we are gleaners only, but we have endeavoured to offer the grain divested of the chaff which often attends it. The subject must be considered an interesting one, connected as it is with the natural history of an admired breed of gallinaceous birds, whose prowess and daring may be supposed to have kindled a martial spirit in mankind. It is to be regretted that even in this sport, as it was formerly in race-horse training, all was conducted under a veil of mystery, assumed, we doubt not, to deceive. It was formerly altogether done by a class neither willing nor able to receive or give instruction; nor was the practice ever much more open, the processes pursued being those only which had been fostered in days when occult methods and empirical practices were in vogue. Each feeder, trainer, and setter-to had his secrets; but whether they were secrets "worth knowing" is not quite clear. Sufficient of wholesome air around a dry and sheltered walk, having a southern aspect, is an important portion of the early *walking* of the bird. An amateur of the cockpit remarks on the secrecy observed among cock feeders, that although he has seen the management of many, he was inclined to deny them the greater part of the merit they would arrogate. "Much depends on the breed," he observes, and he here exercises a sound discretion. Look at our race-horses of the present day, and regard what dependence is placed on the get. How the blood of the most celebrated of our racers of early days is still as distinguished in their descendants, particularly where judgment has been displayed in mating the parents so as to correct the defects and extend the excellences of each. In coursing, cast an eye on the performances of the descendants of the Snowball breed, and then say whether or not the qualities of the parents are not of the very first importance in duly estimating our hopes of the offspring. But even the best breeding requires the aid of the judicious trainer, not that of the mere quacking and self-opinionated one who walks, feeds, and trains from some olden pages of a date when ignorance reigned, and superstition guided every opinion, and interfered in every process: no! but of one who watches Nature's processes as she exhibits them in the care and nurture of both wild and domesticated animals. By closely watching these, he will soon perceive where art can assist nature, and such manifestations he should lay hold of, and profit therefrom. If all does not go on quite so well as he could wish, let him consider every part of his treatment. Are his cocks well housed? are his pens at once dry, airy, and sweet? and are his birds neither molested at night by rats, nor by unnecessary excitement by day, which are circumstances not often taken into account, yet they are important matters, and most concern those from whom *most* is expected. In the cock's walks is occasional green food to be picked up; and is it of a proper kind? No two breeds nor two clutches of chickens thrive in equal proportions; and the fault is not so often in the breed itself, as in some peculiarity in the wants of the animals, or something noxious which assails them from without or within. We once were requested to look at some birds of a very crack breed, but which it was acknowledged did not thrive. After watching them attentively for ten minutes, we found them so restless that we were assured something irritated their skin beyond endurance. We took one in our hands, which, on turning back its half-formed feathers, exhibited myriads of minute animals of the pediculous kind, having their heads embedded in the skin. We recommended a very mild wash of stavesacre (*Staphis agria*) to be applied, which destroyed these lice, and the younglings being left at rest immediately began to thrive.

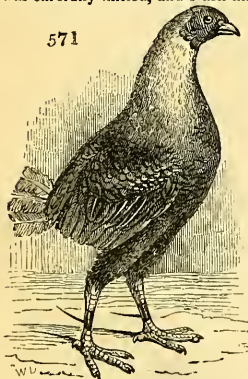
SUBJECT. 1. Rules and Orders for Cocking, at Cockpit Royal, Westminster.

4007. *The Cockpit Royal, Westminster*, was the grand arena for cock fighting, and was erected after the pulling down of the royal cockpit in St. James's-park. Pierce Egan thus describes it, as "a dull old-fashioned building in Tufton-street, Westminster, the cockpit being a large, lofty, and circular building, with seats rising, as in an amphitheatre. In the middle of it was a round matted stage, of about eighteen or twenty feet diameter, as nearly as my eye can measure it, and rimmed with an edge eight or ten in height, to keep the cocks from falling over in their combats. There is a chalk ring in the centre of the matted stage, of perhaps a yard diameter, and another chalk mark within it, much smaller, which is intended for the setting-to, when the shattered birds are so enfeebled as to have no power of making hostile advances towards each other. This inner mark admits of their being placed beak to beak. A large and rude branched candlestick is suspended low down, immediately over the mat, which is used at the night battles." (P. 150.)

4008. *The rules and orders for cocking* were as follows:—"On the weighing morning, the person whose chance it was to weigh last, was to set his cocks, and number his pens, both main and byes, and leave the key of the pens upon the weighing table (or the other party if he pleased might put a lock on the door) before any cock was put into the scale; and after the first pack of cocks were weighed, a person appointed by him that weighed first went into the other pens to see that no other cocks were weighed but what were so set and numbered, provided they were within the articles of weight that the match specified; and if not, to take the following cock or cocks, until the whole number of main and bye cocks were weighed. And after they were all weighed, he was to proceed as soon as possible to match them, beginning at the least weight first, and so on; and equal weights or nearest weights to be separated, provided by that separation a greater number of battles could be made, and not otherwise; and all blanks, that is, choice of cocks, were to be filled up on the weighing day, and the battles divided and struck off for each day's play, as agreed on, and the cocks that weighed the least were to fight the first day, and so upwards." At the time agreed on by both parties to begin fighting, the cocks that were to

fight the first battles are brought upon the pit by the feeders or their helpers; and after being examined, to see they answer the marks and colours specified in the match-bill, they are given to the setters-to, who, after chopping them in hand, give them to the gentlemen who are called masters of the match (who always sit opposite to each other), when they turn them down upon the mat; and the setters-to are not to touch them, except they either hang in the mat, in each other, or get close to the edge of the pit, until they leave off fighting so long as a person can count forty. When both cocks leave off fighting, until one of the setters-to, or a person appointed for telling the law, can tell forty gradually, then the setters-to are to make the nearest way to their cocks, and as soon as they have taken them up to carry them into the middle of the pit, and immediately deliver them on their legs, beak to beak, and not touch them any more till they have refused fighting so long as the teller of the law can count ten, unless they are on their backs, or hung in each other, or in the mat; then they are to set-to again in the same manner as before, and continue it till one cock refuses fighting ten several times, one after another, when it is that cock's battle that fought within the law. But it sometimes occurs that both cocks refuse fighting while the law is telling; when this happens, a fresh cock is to be hoveled, and brought upon the mat as soon as possible, and the setters-to are to toss up which cock is to be set-to first, and he that gets the chance is to choose. Then the other which is to be set-to last must be taken up, but not carried off the pit; then setting the hoveled cock down to the other, five separate times, telling ten between each setting-to, and then the same to the other cock; and if one fights and the other refuses, it is a battle to the fighting cock; but if both fight, or both refuse, it is a drawn battle. The reason of setting-to five times to each cock is, that ten times setting-to being the long law for one cock only, so on their both refusing, the law is to be equally divided between them, as they are both entitled to it alike. Another way of deciding a battle is, if any person offers to lay 10*l*. to a crown (that is, if he is a person thought capable of paying when he loses, or one who stakes his money upon the mat), and no person takes it until the law-teller tells forty, and calls out three separate times, 'Will any one take it?' and no one does, it is the cock's battle the odds are laid on, and the setters-to are not to touch the cock during the time the party is telling, without either cock is hung in the mat, or on his back, or hung together. If a cock should die before the long law is told out, although he fought in the law, and the other did not, he loses his battle; for there cannot be a better rule for a cock winning his battle than killing his adversary in the limited time he is entitled to by cock laws. There are often disputes between the setters-to, as also with the spectators, respecting their counting the long law; for often both cocks refuse fighting until four or five, or more or less times, are told; then they begin telling from that cock's fighting, and counting but once refused, they should continue their number on, until one cock has refused ten times; for when the law is begun to be told it is for both cocks, for if one cock fights within the long law, and the other not, it is a battle to the cock that fought, counting from the first setting-to. All disputes about bets, or the battle being won or lost, ought to be decided by the spectators; for, if the bets are not paid, nor the battles settled according to judgment then given, it will be good evidence in law if an action is brought for the recovery of such bets. The crowning and mantling of a cock, or fighting at the setter-to's hand, before he is put to the other cock, or breaking from his antagonist, is allowed no fight.' (*Sporting Annals* for May, 1828, p. 289.)

4009. In *Pierce Egan's entertaining pages on this subject*, he makes mention of a little tract from which he professes to have gleaned much information; and as we account it no fraud to enable our readers to profit by what has been already borrowed, we shall extract so much from these paragraphs as will tend to illustrate our matter more fully. We, however premise that the cocking season usually began about Shrovetide, and was coeval in duration with racing, and like that extended over the United Kingdom. Both were national sports, and perhaps that of cock fighting was the only one, except racing, that united the plebeian and aristocratic spectators so harmoniously in common pursuits. We hardly need again to state, officially as it were, that cocks preparing for battle were heeled with spurs of either steel or silver, as circumstances might require, or the matchers might fancy. It is evident that, to drive a silver spur fatally through the body required more force than would be necessary were a steel spur employed; but the silver spur certainly carried with it an air of high bearing, and was expected only to be met with on a cock of high pretensions. After a most humorous description of the collected assemblage around, which will repay the reader's trouble to refer to, Egan's authority continues, "I was continuing my inquiries into the characters around me, when a young man of very slang, slight, but prepossessing appearance passed me, dressed in tight kerseymeres, with a handkerchief round his knee, neat white cotton stockings, small shoes, a blue check waiter-looking jacket, short about the waist, and a gay 'kerchief knowingly tied on his neck. He was really a clean, handsome faced young fellow, with thin but acute and regular features, small light whiskers, and with his hair closely cut, and neatly and 'cutely combed down upon his forehead. He had scarcely passed me before I felt something rustle and chuckle by my elbow; and turning round, saw a stout, plump, old ostler-looking man carry a white bag past me, which, by the struggle and vehement motion inside, I guessed to be one of the brave birds for the battle. The two men stepped upon the mat, and the hubbub was huge and instantaneous. 'Two to one on Nash!' 'A guinea on Nash!' 'Nash a crown!' — Sounds like these were only heard (for the bets are laid on the setters-to), till the noise aroused a low muscular-brooding chuckle in the bag, which seemed to show that the inmate was rousing into anger even at the voice of man! From the opposite door a similar procession entered. The setter-to (Fleming by name) was dressed much in the same manner, but he appeared less attractive than young Nash (the name of the young man I have just mentioned). He certainly was not so smart a fellow; but there was an honesty and a neatness in his manner and look which pleased me much. The chuckle of the cock in the one bag was answered deeply and savagely from the other; and the straw seemed spurned in the narrow cell as though the spirit that struck it would not be contained. Nash's bag was carefully untied, and Nash himself took out one of the handsomest birds I think I ever beheld. I must



COCK IN FIGHTING TRIM.

have leave to try my hand at a description of a game-cock (*fig. 571*). He was a red and black bird — slim, masculine, trimmed — yet with feathers glossy, as though the sun shone only upon his nervous wings. His neck arose out of the bag snake-like — terrible — as if it would stretch upward to the ceiling; his body followed, compact, strong, and beautiful; and his long dark blue sinewy legs came forth, clean, handsome, shapely, determined, iron-like! The silver spur was on each heel, of an inch and a half in length, tied on in the most delicate and neat manner. His large vigorous beak showed aquiline — eagle-like; and his black dilating eyes took in all around him, and shone so intensely brilliant, that they looked like jewels. Their light was that of thoughtful, sedate, and savage courage! His comb was cut close, his neck trimmed, his wings clipped, pointed, and strong. The feathers on his back were of the very glossiest red, and appeared to be the only ones which were left untouched, for the tail was docked triangularwise like a hunter's. The gallant bird clucked defiance, and looked as if he 'had in him something dangerous.' Nash gave him to Fleming, who held him above his head, examined his beak, his wings, his legs, while a person read to him the description of the bird from paper; and upon finding all correct, he delivered the rich feathered warrior back to Nash, and proceeded to produce his own bird for a similar examination. Fleming lifted his bird from the bag, and my whole mind was directed his way. This was a yellow bodied, black winged, handsome cock, seemingly rather slight, but elastic and muscular. He was restless at the sight of his antagonist, but quite silent; and old Nash examined him most carefully by the paper, delivering him up to Fleming upon finding him answer to his description. The setters-to then smoothed their birds, handled them, wetted their fingers, and moistened their bandaged ankles where the spurs were fastened, held them up opposite to each other, and thus pampered their

courage, and prepared them for the combat. The mat was cleared of all persons except Fleming and young Nash. The betting went on vociferously. The setters-to taunted each the bird with the other's presence, allowed them to strike at each other at a distance, put them on the mat facing each other, encouraged and fed their crowning and mantling until they were nearly dangerous to hold, and then loosed them against each other for the fatal fight. The first terrific dart into attitude was indeed strikingly grand and beautiful, and the wary sparring, watching, dodging, for the first cut was extremely curious; they were beak-point to beak-point, until they dashed up into one tremendous flirt, mingling their powerful rustling wings and nervous heels in one furious confused mass. The leap—the fire—the passion of strength—the *cerlaminis gaudia*—were fierce and loud! The parting was another kind of thing every way. I can compare the sound of the first flight to nothing less than that of a wet umbrella forced suddenly open. The separation was death-like: the yellow, or rather the *ginger* bird, staggered out of the close, drooping, dismantled, bleeding! He was *struck*! Fleming and Nash severally took their birds, examined them for a moment, and then set them again opposite to each other. The handling of the cocks was as delicate as if they had been made of foam, froth, or any other most perishable matter. Fleming's bird staggered towards his opponent, but he was hit dreadfully, and ran like a drunken man, tottering on his breast, sinking on his tail; while Nash's, full of fire and irritated courage, gave the finishing stroke, that clove every particle of life in twain. The brave bird thus killed, dropped at once from the 'gallant bearing and proud mien,' to the relaxed, dragged, motionless object, that lay in bleeding ruin on the mat. I sighed, and looked thoughtful, when the tumult of the betters startled me into a consciousness of the scene at which I was present, and made me feel how poorly timed was thought amid the characters around me. The victor cock was carried by me in all his pride, slightly scarred, but evidently made doubly fierce and muscular by the short encounter he had been engaged in. He seemed to have grown to double the size! his eyes were larger. The paying backward and forward of money, won and lost, occupied the time until the two Nashes again descended with another cock. Sometimes the first blow was fatal—at another time the contest was long and doubtful; and the cocks showed all the obstinate courage, weariness, distress, and breathlessness, which mark the struggles of experienced pugilists. I saw the beak open, the tongue palpitate, the wing drag on the mat: I noticed the legs tremble, and the body topple over upon the breast, the eye grow dim, and even a perspiration break out upon the feathers of the back. When a battle lasted long, and the cocks lay helpless near or upon each other, one of the feeders counted ten, and then the birds were separated and set-to at the chalk. If the beaten bird does not fight while forty is counted, and the other pecks or shows signs of battle, the former is declared conquered."

We cannot, as we think, close this account of cock fighting in a more appropriate manner than by inserting some clever verses on the subject by Dr. Robert Wild, a nonconformist divine and poet, born in 1609, a man of great talent and exemplary virtues. In 1648 he was appointed rector of Aynho, in Northamptonshire. He appeared also to have been as great a wit as he was a poet. It has been related of him, that being under the necessity of preaching a probationary sermon with another divine for the living, when the contest was over, on being asked how he had succeeded? he replied, "We have divided it—I have got the Ay, and he the No." Some of his sermons gave great satisfaction, and are still extant:—

Verses on Cock Fighting, by Dr. Robert Wild.

"No sooner were the doubtful people set,
The match made up, and all that would had bet,
But straight the skilful judges of the play
Brought forth their sharp heel'd warriors; and they
Were both in linen bags, as if 'twere meet
Before they died to have their winding-sheet.
Into the pit they're brought, and being there
Upon the stage, the Norfolk chanticler
Looks stoutly at his ne'er before seen foe,
And, like a challenger, began to crow
And clap his wings, as if he would display
His warlike colours, which were black and grey.
Meantime the wary Wisbich walks and breathes
His active body, and in fury wreathes
His comely crest, and, often looking down,
He whets his angry beak upon the ground:
This done, they meet, not like that coward breed
Of Æsop; these can better fight than feed;
They scorn the dunghill, 'tis their only prize
To dig for pearls in each other's eyes.
They fought so nimbly, that 'twas hard to know,
To the skilful, whether they did fight or no,
If that the blood which dy'd the fatal floor
Had not bore witness of 't. Yet fought they more,
As if each wound were but a spur to prick
Their fury forward. Lightning's not more quick
Or red than were their eyes: 'twas hard to know
Whether 'twas blood or anger made them so.
I'm sure they had been out had they not stood
More safe by being fenced in with blood.
Thus they vied blows; but yet (alas!) at length,
Although their courage were full try'd, their
strength
And blood began to ebb. You that have seen
A watery combat on the sea, between

Two angry, roaring, boiling billows, how
They march and meet, and dash their curled brow;
Swelling like graves, as though they did intend
T' entomb each other e'er the quarrel end;
But when the wind is down, and blust'ring weather,
They are made friends, and sweetly run together;
May think these champions such; their blood grows
low,
And they, which leap'd before, now scarce can go;
Their wings, which lately at each blow they clapp'd
(As if they did applaud themselves) now flapp'd;
And having lost th' advantage of the heel,
Drunk with each other's blood, they only reel;
From either eyes such drops of blood did fall,
As if they wept them for their funeral.
And yet they fain would fight; they came so near,
Methought they meant into each other's ear
To whisper wounds; and when they could not rise,
They lay and look'd blows int' each other's eyes.
But now the tragic part! After this fit,
When Norfolk cock had got the best of it,
And Wisbich lay a dying, so that none,
Though sober, but might venture seven to one,
Contracting, like a dying taper, all
His strength, intending with the blow to fall,
He struggles up, and having taken wind,
Ventures a blow, and strikes the other blind;
And now poor Norfolk, having lost his eyes,
Fights only guided by antipathies:
With him (alas!) the proverb holds not true,
The blows his eyes ne'er saw, his heart must rue.
At length, by chance, he stumbled on his foe,
Not having any power to strike a blow:
He falls upon him with his wounded head,
And makes his conqueror's wings his feather-bed!"

PART X.

BRITISH BOXING

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4010. *This is another of our pursuits* that modern refinement has most properly condemned, though in saying this we must distinguish between boxing as a sport or as a manly mode of settling differences, and boxing, as a brutal exhibition of scientific strength for the purpose of making money.

4011. *As a sport when practised with the gloves*, or the *naked fist*, it is calculated to invigorate the frame by the expansion of the chest, the development of the muscular powers, and the promotion of those quick and active evolutions, of which the human limbs, when energetically exercised, are capable, and the encouragement of which is so conducive to bodily health. It instils into the mind confidence and self-possession, gives a bold and fearless bearing to the practitioner, and sustains that natural courage, which, if it does not altogether avert, at least affords the best protection in danger or difficulty—a feeling, the value of which sportsmen of all classes can duly appreciate.

4012. *As a mode of settling differences*, and more especially among the humbler ranks of society, it is at once manly and praiseworthy, and is a fit and humane substitute for those savage practices to which men in a barbarous state but too frequently have recourse for the gratification of excited passion or revenge. It teaches men to rely on those powers with which Nature has imbued them; and, guided by those *rules of fair play*, which are inseparable from the true principles of British boxing, while it promotes that indomitable bravery, which, whenever and wherever called into action, has distinguished the character of Englishmen all over the globe, it represses those treacherous and cowardly propensities, which, in countries where the practice is unknown, lead to the use of the *knife* or the *stiletto*, or some equally atrocious mode of assault—propensities which it is to be lamented even in “happy England,” of late years, from the mistaken zeal with which public boxing matches have been suppressed, have been exhibited with painful and disgusting frequency.

4013. *By the rules of “the ring”* (the *arena* in which the science and moral, if the phrase can with propriety be adopted, of boxing are practically demonstrated), which are hereafter given, it will be seen that every unfair advantage is strictly forbidden, and that any attempt at *treachery*, or *foul play*, meets with reprehension and disgrace. The spectators, however numerous, are impressed with the value and importance of these rules, and whenever violated are prompt in expressing their indignation, and applauding the justice which leads to their enforcement; thus affording the strongest encouragement to honourable bearing in combat, generous forbearance towards a sinking antagonist, and manly submission in defeat—qualities which cannot be too widely disseminated.

4014. *An apology for prize fighting* does not necessarily form a part of the task here undertaken—that of describing the *history and practice of boxing* in England being our

object. As with cock fighting, so with prize fighting, or, indeed, with almost every pursuit, some one will be sure to be found to uphold it : so boxing at one time found an able advocate in the person of the late Mr. Barber Beaumont, manager, we believe, of one of the London Assurance offices, and a magistrate of Middlesex. Assuming that Mr. Barber Beaumont had no connexion with the paper or its conductors, it shows the tendency of the times towards pugilism, that he should have been allowed to vindicate the prize-ring in the columns of the *Morning Post*, which he did in the following letter, in the year 1829 : —

4015. "*The effusions of humanity*, which have from time to time effervesced in tirades against the practice of boxing, have lately overflowed with a vengeance. Two men are sentenced to the severest punishment of law, short of death, for being seconds to another man who had the misfortune to burst a bloodvessel by his own exertions in a boxing match ! This is done, it is said, to put down the brutal practice of boxing. If by the sacrifice of two men the brutal practice of quarrelling, fighting, and destroying, could be extinguished, the good so produced would be an apology for the dreadfully severe sentence passed upon the poor men selected for an example. But no such absurd expectation is entertained : while human nature is constituted as it is, and ever has been, there will be fighting. The principle of contention cannot be eradicated from our nature ; but it may be modified, and to do this is the triumph of civilisation. Military discipline divests the conflicts of armed bodies of men of many of their horrors ; and boxing divests their individual encounters of the ferocity and murderous terminations to which they naturally tend. Look at the effects of private brawls among people where boxing and the laws of the ring are not recognised : the knife supplies the place of the fist, and the enraged combatants cut and mangle each other until the life blood of one or both is poured out in the fray. In a neighbouring country, one man who conceives himself aggrieved by another does not scruple to waylay him, and murder him with a bludgeon or a pitchfork, or to set fire to his cabin and burn him and his family in their sleep. In our own northern counties, where boxing is but imperfectly understood, and the laws of the ring unknown, they fight up and down ; that is, when one gets the other down, the one who is uppermost throttles, kicks, or jumps on the one down, till he has killed or disabled him. This, too, is pretty much the case in Ireland, and indeed all over the world, except in those parts of England where regular boxing is in use. *Gouging*, which consists in a man getting his thumb into the socket of his opponent's eye, and scooping it out, is another of the brutal modes of conflict used in some parts of the United States and of our own northern counties. I boldly contend, then, that boxing, so far from being a brutal practice, is the best corrective we know of, of the brutal practices which flow out of private quarrels among the commonalty. It is not in the nature of man, nor ought he, to sit down tamely under injuries. To say that labouring men, like their betters, should always appeal to the laws when they quarrel, is rank hypocrisy, and an insult to common sense. They have neither time nor money to offer in sacrifices for the protection of our courts of law and equity, such as it is : they must settle the quarrels amongst themselves as well as they can ; and out of this necessity have sprung up *boxing, and the laws of the ring*. I wish all laws had an equal portion of humanity and good sense in them. The discipline of the ring first regards the relative powers of the combatants. In stature, strength, activity, and age, there must be no great disparity. They are forbidden to use any other weapons than those which nature has given them ; no unfair advantage is allowed. Nay when a man strikes down his antagonist his assault ceases ; he does not follow up an advantage so decided, but leaves his fallen foe to the care of his friends, to raise him up, and replace both combatants on equal terms for a fresh trial of prowess. This is being more than just ; there is a generosity in this proceeding, of which I know of no parallel in the customs of any other country, ancient or modern. It inculcates a feeling of forbearance, of humanity, and of self government, even while under the highest excitement to violence, which must elevate the character of all who share in it, and who regard it. But the interval allowed for raising a combatant from the earth and replacing him before his antagonist, is no more than sufficient for those purposes ; it is not extended to a degree which would rest and renovate him, because that would enable the combatants to continue fighting for a long period, and to punish each other more severely. All waylayings, all attacks by surprise, all cutting and stabbing, knocking out of brains, scooping out of eyes, jumping on a fallen antagonist, or burning him in his sleep, all secret assaults and unmanly advantages whatever, are abhorrent to fair boxing. To talk, therefore, about the brutal practice of boxing, is to talk ignorantly and nonsensically. The discipline of the ring restrains these practices. It divests combatants of their most savage means of vengeance, and saves many lives which would otherwise be sacrificed under the assaults of unbridled rage.

"But," say some of the grave authorities of the law, 'I do not object to men fighting upon a sudden quarrel, while their blood is up ; it is the pitched battle and the fighting for money which I abominate.' *Dicta* of this kind from persons high in office, and duly seasoned with professions of humanity, float favourably on the ear ; but they will not bear examination. First, as to the pitched battle, I contend that men ought not to be encouraged to fight while their blood is up, because when their blood is up their reason is down, and that state of irritation mostly happens when they are in drink. Fighting in that state very frequently produces the rupture of a bloodvessel and death. It is therefore the office of true humanity to dissuade men from fighting when their blood is up, and to persuade them to wait until the next day, or some after period, when it has become cool. By deferring an intended combat until after the heat of passion has subsided, nineteen times in twenty it is got rid of altogether. I think another word need not be said to show the egregious folly, as well as cruelty, of the pretended humanity, which would encourage men to fight while their irritation is at the highest, and would intimidate a friend from dissuading them from fighting until after they had become cool, lest he should fall under the penalties of the law for seconding a fight between parties who are no longer influenced by passion. There is another view of the subject, which, in a national point of view, deserves serious consideration. I cannot conceive any better preparation for making effective combatants in our army and navy than the national practice of boxing. It teaches a man to look his adversary in the face while fighting ; to bear the threatening looks and fierce assaults of an antagonist without flinching ; to watch and parry his intended blow ; to return it with quickness, and to follow it up with resolution and effect. It habituates him to sustain his courage under bodily suffering, and when the conflict has ceased, to treat his adversary with humanity. The feeling of superiority which the practice of boxing gives an Englishman over a foreigner in private quarrels is carried into the field of battle, for the boxer cannot think of turning his back on a foe whom he has always deemed his inferior in combat. To this feeling, and to the habit of fighting from boyhood, hand to hand and face to face, more than to superior bodily strength and courage, I think may reasonably be attributed the superiority of English soldiers at the charge, and of English sailors in the act of boarding.

"If I am right in believing, as I sincerely do, that boxing and the laws of the ring, properly understood, are conducive to the ends of humanity, and also to the effectiveness of our soldiers and sailors, it is right that the practice and its regulations should be upheld. This is most effectually done by occasional matches for prizes, because many persons are then interested in seeing that the regulations of the ring are properly observed, and because, by the moderate encouragement of skilful pugilists, the art of boxing is preserved from degenerating into brutish labouring. People are apt to suppose the bodily sufferings of these pugilists to be much greater than they really are. They are led into this belief from the high coloured descriptions of their combats which are wrought into the newspapers : but, in fact, pugilists seldom receive half such severity of punishment in their matches as labouring men frequently do in their casual rencounters. They defend themselves so well from severe blows, and their training prepares them so well for receiving as well as giving, that their bruises disappear in much less time than bruises received in common fights : frequently the successful pugilist quits the ring without receiving a scratch or discolouration of the skin. But this part of the subject may be fairly left to be settled by those who are most interested in it, viz. by the pugilists themselves ;

they are free agents and able bodied men, and unless they prefer a drubbing for half an hour or an hour, for a recompense that enables them to live free from labour during a month or so, to working all the month through, they will not fight but work. The very tender hearted, therefore, who cannot bear to hear of a bruiser being bruised, but hunt him like a wild beast, and punish him almost to his death, in evidence of their consistency and humanity, would do well to display their tenderness in some other way, and to leave black eyes and bruised noses to the care of their owners.

"It is further objected, that a boxing match draws together a vast number of thieves and blackguards. This is very true; and so does an execution, a lord mayor's show, a court day at St. James's, and every other interesting sight which is open to the public at large.

"It cannot be denied, however, that boxing matches, being proscribed meetings, and unattended by any peace officers, are particularly favourable to the congregation of thieves and other ruffians. This defect of police keeps many respectable persons from such meetings who would otherwise gladly witness the exercises of the day. But lawless as these meetings are declared to be, and open as they are to the unrestrained operations of ruffians of every kind, it is remarkable that we seldom, if ever, hear of any riot taking place at any of them, or of any theft being committed beyond picking pockets. It is also remarkable, that after hundreds of fighting men and their followers have travelled some score miles, and are assembled on the place of action, and the ring is formed, and their excitement is at the highest, they suffer themselves to be driven from the scene of their much loved amusement like a flock of sheep, at the bidding of some clerical or meddling magistrate. This shows an obedience to persons in authority, which might hardly be expected under the circumstances, but it is creditable to the parties yielding it. It seems to show that the lessons of patience under suffering, and command of temper and submission to authority, taught by the laws of the ring, extend beyond it, and influence the habits and manners of the people connected with it in their general demeanour. It proves also that the cry against such meetings, as being breaches of the peace, is unfounded. It is evident, therefore, that boxing and the laws of the ring impose a most valuable restraint upon the ebullitions of rage and the thirst for revenge amongst the lower orders, teaching them to preserve their temper and self-possession under suffering, to scorn unfair advantages, to defend themselves with firmness, and to exercise the virtues of forbearance and humanity towards a fallen foe, and that they are also an excellent preparative for making good sailors and soldiers. It is further evident, that the anathemas and proscriptions which of late years have been levelled against the practice of boxing, have tended to reduce it to disrespect and disgrace; and the same unjust and hypocritical means, if persevered in and unopposed, are likely to cast it into disuse."

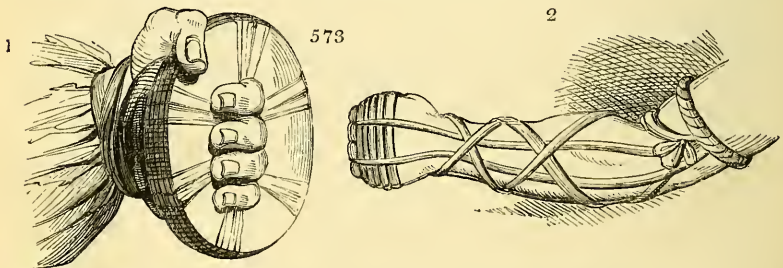
4016. *This letter puts the pros and cons* fairly before the public, which, after all, only amount to this, that fists are better than the stiletto. Time has wrought a wonderful change upon the Tom and Jerry days in which Mr. Barber Beaumont wrote, and few justices of the present time would, we think, be inclined to patronise the pugilistic ring. At least, if any of them were to do so openly, we think they ought not to be surprised at receiving a letter from the Secretary of State for the Home Department, or from the Lord Chancellor's secretary, or perhaps from both, requesting to be informed of the facts, which would doubtless be followed by an intimation that his lordship had felt it to be his duty to remove the pugilistic offenders' names from the Commission of the Peace for the county to which they belonged.

4017. *The history of boxing* opens too wide a field for us to enter upon extensively at the present day: indeed, were it not that this work professes to trace British pursuits from early times down to the present one, we do not know that we should have introduced it at all, which must be an apology for the brief notice we can now afford to give it.

4018. *Antiquity of boxing.* With regard to the antiquity of boxing, it requires no stretch of imagination to come to the conclusion that it is coeval with the existence of man himself; and that, as the *fist* is the first *weapon* with which man was provided, either for offence or defence, it takes precedence of all others. There can be no doubt that our forefathers, even from the days of Adam, settled their differences, or displayed their powers, in jest or earnest, with this *weapon*; and it is equally clear that with this, as with other weapons of a more deadly character, it was not till civilisation had made extensive advances that its use and cultivation, as a source of honour and of renown, became an object of public encouragement.

4019. *The classic authors afford* abundant proofs of the high estimation in which the use of the *fist* was held; and if we are to take these as our data, we find that *Pollux*, the twin brother of *Castor*, was the first who in pagan times obtained distinction by the use of his *fives*, conquering all who were opposed to him, and, with *Hercules*, obtaining a place among the gods for his *sparring* qualities. It would seem, however, that *Pollux* and his compeers were not content with the use of the simple weapon of Nature, but, following "the march of improvement," increased its power and formidable character by the addition of the *cæstus*, an artificial covering to the hand, composed of several thicknesses of raw hide, bound by thongs to the wrist and arm, which gave fearful and fatal effect to the blow that might be dealt.

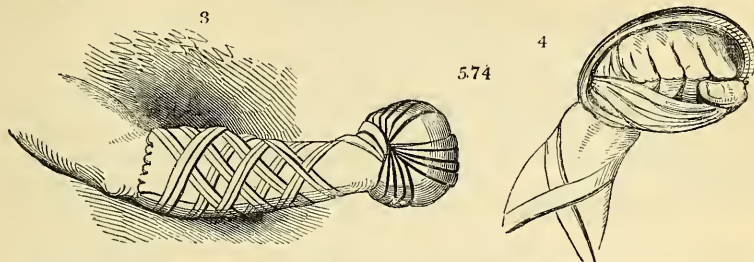
4020. *Of the cæstus* there were various sorts, of which a few are here selected. The first is a representation of the most tremendous kind of *cæstus*. The original, in bronze, was found at Herculaneum. It is of a pro-



portion above the natural size; and appears to have belonged to the statue of some gladiator, armed for the fight. This *cæstus* was composed of several thicknesses of raw hides, strongly fastened together, in a circular form, and tied to the hand and part of the fore-arm; and yet, to prevent its hurting the *metacarpus*, a glove of thick worsted was used for the occasion, ending in a sort of fringe, called *vellus*. (*Voyage Pittoresque de Naples et de Sicile*, par l'Abbé de St. Non, vol. ii. p. 49.)

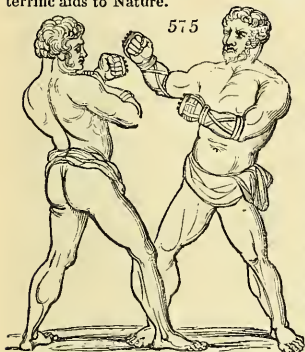
The second, however terrific in its operations, was not so destructive and injurious as the preceding one, and is copied from plate 20. of *Lenn's Costume des Peuples de l'Antiquité*, Liege, 1776.

The third represents a castus of nearly the same kind, and capable of administering the most death-like punishment. It will be seen in the first volume of *Bronzi del Museo Kirkeriano*, where Amycus is discovered fighting with this armour, in his conflict with Pollux.



The fourth, materially different from the three preceding ones, though equally destructive in its operation, is copied from a bas-relief, found also at Herculeaneum. It is also engraved as a tail-piece in the second volume of *St. Non's Voyage Pittoresque de Naples et de Sicile*, p. 51.

And here we have two of the members of "the ancient prize-ring" in actual combat, provided with these terrific aids to Nature.



ANCIENT BOXERS

4021. *The use of these ponderous gauntlets*, many of them being armed with knobs of brass, blunt points of iron, plummets of lead, &c. led to the adoption of a species of *armour* for the head, which were called *amphotides*, and the object of which was to protect the temporal bones and arteries. They encompassed the ears with their thongs and ligaments, and were buckled under the chin or behind the head. They were not unlike helmets, and were composed of hides of bulls, studded with knobs of iron, or strongly quilted, in order to blunt the impetus of the blows.

4022. To pursue the ancient history of these games is however foreign to the purpose in view: it must suffice to say, therefore, that both among the Greeks and Romans the practice of pugilism, although differing in its main features from our modern and less dangerous combats, was considered essential in the education of their youth, from its manifest utility in "strengthening the body, dissipating all fear, and infusing a manly courage into the system." The power of punishment, rather than the *Art of Self-defence*, however, seems to have been the main object of the ancients; and he who dealt the heaviest blow, without regard to protecting his own person, stood foremost in the list of heroes. Not so in modern times; for, while the quantum of punishment, in the end, must decide the question of victory or defeat, yet the true British boxer gains most applause by the degree of science which he displays in defending his own person, while with quickness and precision he returns the intended compliments of his antagonist, and like a

skillful chess-player, takes advantage of every opening which chance presents, thereby illustrating the value of coolness and self-possession at the moment when danger is most imminent. This short reference to the boxing propensities of the ancients, as contrasted with the practice of Englishmen in modern times, leads at once to

4023. *The progress of British boxing.* The annals of our country from the invasion of the Romans downwards sufficiently demonstrate that the native Briton trusted more to the strength of his arm, the muscular vigour of his frame, and the fearless attributes of his mind in the hour of danger, than to any artificial expedients; and that whether in attack or defence, the combination of those qualities rendered him at all times formidable in the eyes of his assailants, however skilled in the science or practice of warfare. If illustrations were required to establish this proposition, they are to be found in every page of our history, from the days of Alfred to the battle of Waterloo; and if it be asked how it is that Englishmen stand thus pre-eminent in the eyes of the world, it may be answered, that it is to be ascribed to the encouragement given to those manly games (boxing more especially) which are characteristic of their country, and which, while they invigorate the system, sustain and induce that moral courage, which experience has shown us to be the result as much of education as of constitution, perhaps more of the former than of the latter. The truth of this conclusion was so strongly impressed on the feelings of our forefathers, even in the most barbarous ages, that we find all their pastimes were tinged with a desire to acquire superiority in athletic recreations, thus in peace inculcating those principles which in war became their safest reliance.

4024. *As civilisation advanced*, and when the ingenuity of man found mechanical substitutes for the weapons of Nature, still the value of the same principle was acknowledged and every where encouraged; and whether as soldiers or civilians, whether in the camp or on the village green, each man sought to excel his companion in mimic combat, thus preparing himself for the hour of real danger, and by his example infusing a spirit which all classes imbibed, and which to the hour in which we live gives to *John Bull* that proud pre-eminence in "the battle-field," acknowledged by the most jealous of his enemies.

4025. *In tracing the early history of boxing*, beyond occasional allusions to the rustic games of our "bold peasantry," little of authentic record can be found till about the year 1740, at which period public exhibitions of professors began to attract the attention, and obtain the patronage, not only of men of the highest rank in the country, but of all classes of the community. It must be admitted, that up to this period "the science of self-defence" had made but little progress, and that *strength and bottom*, combined with the *powers of endurance*, constituted the main recommendations of the practitioners. There was but little refinement in the public combats which took place for purses and other prizes. The system of *give and take* was alone adopted; and he who could hit the hardest, or submit to punishment with the best grace, became the favourite with the *amateurs*, who crowded the rude theatres in which the performances took place, and among whom, as in modern times, the issue of the battle constituted prolific sources of speculation and excitement. *Southwark fair, Smithfield, Moorfields*, and various other localities, had their "booths" and "rings" for the display of boxing, single stick, and broad sword; but to such an extent of ferocity were these combats at last carried, that they were partially suppressed.

4026. *Among others who stood pre-eminent* in the boxing circles of those days was *Fig*, who not only displayed his own powers, but, like a skillful manager, engaged other *stars* to gratify the taste of the frequenters of his

theatre. As a specimen of the mode in which this gymnastic *manager* conducted the affairs of his "company," we give the following copy of one of his "bills of entertainment :"—

AT

FIG'S GREAT TIL'D BOOTH,
On the Bowling Green, Southwark,
During the Time of the *FAIR*,
(Which begins on SATURDAY, the 18th of SEPTEMBER),
The TOWN will be entertained with the
MANLY ARTS OF
Foil-play, Back-sword, Cudgelling, and Boxing,

in which

The noted PARKS, from Coventry, and the celebrated gentleman prize-fighter, Mr. MILLAR, will display their skill in a tilting-bout, showing the advantages of *Time* and *Measure* :

ALSO

Mr. JOHNSON, the great Swordsman, superior to any man in the world for his unrivalled display of the *hanging-guard*, in a grand attack of SELF-DEFENCE, against the all-powerful arm of the renowned SUTTON.

DELFORCE, the finished Cudgeller, will likewise exhibit his uncommon feats with the *single-stick* ; and who challenges any man in the kingdom to enter the lists with him for a *broken-head* or a *belly-fall* !

BUCKHORSE, and several other *Pugilists*, will show the Art of Boxing.

To conclude

With a GRAND PARADE by the Valiant FIG, who will exhibit his knowledge in various Combats—with the Foil, Back-sword, Cudgel, and Fist.

To begin each Day at Twelve o' Clock, and close at Ten.

Vivat Rex.

N.B. The Booth is fitted up in a most commodious manner, for the better reception of Gentlemen, &c. &c.

4027. *Fig of course had his rivals*, who in various parts of the town invited and received the encouragement of the lovers of manly sports.

4028. *It will be seen from the above bill*, that the *sword* and the *cudgel* were not less esteemed than the *fist*, and the combined exertions of the professors of each afforded attraction of no common character, and obtained the countenance of the most illustrious men in the country, among whom the old Duke of Cumberland then stood pre-eminent.

4029. *It would seem that Fig* signalled himself more as a *fencer* and *cudgeller* than as a *boxer* ; nevertheless, his proficiency in the former gave him an advantage over those pugilists who were not equally accomplished ; and his reputation rapidly increasing, he opened an *academy*, which was well known as *Fig's Amphitheatre*. This place was the resort of all classes, and was the scene of many desperate combats, which, with the character of the combatants, were subsequently recorded in a volume, entitled *Captain Godfrey's Treatise upon the useful Science of Defence*—a very amusing work, now extremely scarce, and dedicated to the Duke of Cumberland. Captain Godfrey was the *Captain Barclay* of his day, and was distinguished by his proficiency in all the athletic sports of his time, testing the merits of the practitioners by personal trials, in which even Fig himself found him "an awkward customer ;" and in the task which he undertook of sketching the characters of those distinguished in his favourite pastimes, he proved himself not only an impartial but a competent historian. His treatise, which was published in 1747, is full of amusing anecdotes characteristically told, and many of them have been transferred into the first volume of *Boziana*, edited by Mr. Pierce Egan—a work which may be fairly termed the class-book of pugilism. The captain thus speaks of Fig (whose name and character, by the bye, has recently been brought prominently into public notice in Mr. Ainsworth's romance of *Jack Sheppard*) :—"I have purchased my knowledge, with many a broken head and bruises in every part of me. I chose to go mostly to Fig, and exercise with him ; partly as I knew him to be the ablest master, and partly as he was of a rugged temper, and would spare no man, high or low, who took up a stick against him. I bore his rough treatment with determined patience, and followed him so long, that Fig, at last finding he could not have the beating of me at so cheap a rate as usual, did not show such fondness for my company. This was well known by gentlemen of distinguished rank, who used to be pleased in setting us together."

4030. *It is worthy of remark*, that in modern times similar trials took place between amateurs and pugilists, before the latter were enabled to obtain decided patronage. Colonel Barton and Captain Barclay often submitted new candidates to this ordeal ; and frequent trials with the gloves took place, in which gentlemen who were first-rate adepts at the art either confirmed the pretensions or exposed the presumption of candidates for fistie fame.

4031. *The first dawn of science*. According to Captain Godfrey, Jack Broughton succeeded Fig in popularity, but far exceeded him in claims to patronage, from the introduction of those principles of science and regularity which tended to strip the practice of boxing of many of those attributes of *barbarism* with which it had previously been characterised. He may in fact be pronounced "the father of the science of the Art of Self-defence," as far as the simple use of the fist is concerned. For eighteen years he was THE CHAMPION OF ENGLAND, conquering all who came before him by the superiority of his skill, and raised himself to a pinnacle of fame which secured for him the countenance and patronage of the Duke of Cumberland and others, not less distinguished in the annals of their country. "Perfect master of time and measure," says Captain Godfrey, "he stopped as regularly as the swordsman, carried his blows truly in the line, stepped not back distrusting of himself to stop a blow, and fumbling in the return with an arm unaided by his body, producing but a kind of fly-flap blows, such as pastry-cooks used to beat insects from their tarts. No ! Broughton stepped boldly and firmly in, bid welcome to the coming blow, received it with his guardian arm, then with a general summons of his swelling muscles, and his firm body seconding his arm, and supplying it with all its weight, poured the pile-driving force upon his man." In these few words are portrayed the fundamental ingredients for an accomplished boxer ; and possessing them as he did to an extraordinary extent, Broughton soon took the lead in his profession, and found abundant supporters in the erection of an edifice in Hanway-street, Oxford-street, entitled *Broughton's New Amphitheatre*. In its appearance it was similar to Astley's Riding-school, and was surrounded with boxes, pit, and gallery, a commodious stage being erected in the centre of the circus for the use of the combatants. This theatre was opened on the 10th of March, 1743, and eclipsed all others which had previously existed. Advertisements went forth announcing a succession of battles between the first-rate pugilists of the day, who met manfully, foot to foot, and never quitted the stage till one or other was defeated, the reward to each being in proportion to the receipts at the door, according to an acknowledged scale ; and these receipts, from the favour in which such exhibitions were held by all ranks, often amounted to very considerable sums.

4032. *First rules of boxing*. Broughton and his supporters soon found, from the disputes and discontents which frequently arose, that the adoption of some *fixed rules* for the guidance of the judges, as well as for the satisfaction of the combatants, were indispensable ; and hence the following *Rules*, approved by the gentlemen who frequented the theatre, and agreed to by the pugilists, were publicly promulgated on the 18th of August, 1743 ; and, what is not a little singular, from that period until the introduction of the *NEW RULES*, humanely promulgated after a fatal fight between *Owen Swift* and *Brighton Bill* in 1838 (which shall hereafter be described), these rules constituted almost the only guide in the decision of pugilistic contests, whether on a stage or on the turf.

BROUGHTON'S RULES.

1. That a square of a yard be chalked in the middle of the stage; and every fresh set-to after a fall, or being parted from the rails, each second is to bring his man to the side of the square, and place him opposite to the other; and till they are fairly set-to at the lines, it shall not be lawful for one to strike the other.

2. That in order to prevent any disputes, the time a man lies after a fall, if the second does not bring his man to the side of the square within the space of half a minute, he shall be deemed a beaten man.

3. That in every main battle, no person whatever shall be upon the stage except the principals and their seconds; the same rule to be observed in by-battles, except that in the latter, Mr. BROUGHTON is allowed to be upon the stage to keep decorum, and to assist gentlemen in getting to their places, provided always he does not interfere in the battle; and whoever presumes to infringe these rules, to be turned immediately out of the house. Every body is to quit the stage as soon as the champions are stripped, before they set-to.

4. That no champion be deemed beaten unless he falls coming up to the line in the limited time, or that his own second declare him beaten. No second is to be allowed to ask his man's adversary any questions, or advise him to give out.

5. That in by-battles the winning man to have two thirds of the money given, which shall be publicly divided upon the stage, notwithstanding any private agreements made to the contrary.

6. That, to prevent disputes, in every main battle, the principals shall on coming on the stage choose from among the gentlemen present two umpires, who shall absolutely decide all disputes that may arise about the battle; and if the two umpires cannot agree, the said umpires to choose a third, who is to determine it.

7. That no person is to hit his adversary when he is down, or seize him by the ham, the breeches, or any part below the waist: a man on his knees to be reckoned down.

4033. *These rules*, it will be seen, laid the foundation for that *manly bearing and fair play*, which offers so wide a contrast to the practices of barbarous ages, when every advantage was admissible where brute strength or accidental casualties placed a combatant in the power of his antagonist. It is to be lamented that even in modern times the inhuman practices of uncivilised periods have subsisted to a disgraceful extent, and hence we have heard of *gouging*, that is to say, forcing out the eye of an antagonist with the thumb or finger; *purring*, kicking a man with nailed shoes as he lies on the ground, striking him in vital parts below the waistband, seizing him when on his knees, and administering punishment till life be extinct, and a variety of other savage expedients by which revenge or passion has been gratified; and it is remarkable that in those counties in which pugilism or prize-fights have been least encouraged, these horrors have been most frequent: we refer to Lancashire in particular, where even to this day that species of contest, called *up and down fighting*, that is, when a man is got down he is kept down and punished till incapable of motion, is permitted with impunity, unless indeed the death of the victim leads to the apprehension and trial of the survivor.

4034. *The adoption of Broughton's rules in the metropolis* soon led to their extensive dissemination in the provinces, and public boxing was thereby stripped of half its terrors; while in the adjustment of private quarrels, the settlement of the simple issue of "which was the better man" after "a fair stand-up fight," put an end to all bad feeling; and the conqueror or the conquered submitted with a good grace to "the fate of war," the strongest proof of the effects of cultivation, and the best test of a manly and honourable feeling.

4035. *To Broughton*, then, is to be ascribed the credit of two great reforms in the practice of pugilism, namely, the introduction of *science and humanity*; and by the moral effects these inculcated, more has been done to establish the high character of Englishmen for honour and fair play, than by all the eloquence of the pulpit or the senate. To Broughton also do we owe the introduction of *gloves, or muffs*, for conducting *mock combats or sparring matches*, as they are now called, by which men receive lessons without injury, or display the *Art of Self-defence* without those painful consequences to which Captain Godfrey so willingly submitted, and which he so feelingly describes, but which deterred young aspirants from entering those arenas in which, after harmless initiation, they often became distinguished adepts, or were prepared to take their own parts in unavoidable encounters. Broughton thus announces his new invention in the *Daily Advertiser* of February, 1747:—

"Mr. Broughton proposes, with proper assistance, to open an academy at his house in the Haymarket, for the instruction of those who are willing to be initiated in the mystery of boxing, where the whole theory and practice of that truly British art, with all the various stops, blows, cross-butts, &c. incident to combatants, will be fully taught and explained: and that persons of quality and distinction may not be debarred from entering into a course of those lectures, they will be given with the utmost tenderness and regard to the delicacy of the frame and constitution of the pupil, for which reason *muffs* are provided, that will effectually secure them from the inconvenience of black eyes, broken jaws, and bloody noses."

4036. *We do not profess here to give a history of all the men who followed in the steps of Broughton*, of whose doings a very correct summary will be found in the first volume of *Boxiana*, already alluded to; it must suffice to say that Broughton, after having been eighteen years CHAMPION OF ENGLAND, was deprived of his laurels on the 10th of April, 1750, by a man named *Slack* (the grandfather of the Belchers, heroes of modern times), who contrived by repeated blows to render him completely blind; and in fourteen minutes, being unable to see his antagonist, he gave in, so much to the displeasure of the Duke of Cumberland, who was his greatest patron, that he withdrew his countenance from him. Soon after this his amphitheatre was closed, and he never fought again. *Want of training, and holding his antagonist too lightly*, it is said by cotemporary writers, led to this result, a fate which has befallen many men of the same class in after times from the same cause. He lived to the good old age of eighty-five years, and died on January 8, 1789, at Walcott-place, Lambeth, in the churchyard of which parish he was interred.

4037. *The second era of science*. From the days of Broughton we advance to the next era of pugilistic improvement, and introduce to our readers *Mendoza*, who as a teacher of "the science" may be said to have trodden in the steps of his great predecessor, and to have far exceeded him in the refinements of the art. In poetry, in painting, and in music, we have our natural geniuses, who soar above all competitors in the brilliancy of their works; and so it would seem it is in the rougher paths of manly exercises. Mendoza was a natural genius in the elegant and effective use of his *fists*; when yet a boy, the ring and its adjuncts superseded all other considerations in his mind. He studied the *Art of Self-defence* with the perseverance of an enthusiast; and at length reached a degree of perfection which placed him above all his rivals, and as a "professor" was known in almost every town in the kingdom.

4038. *The great cotemporary of Mendoza was Humphries*, denominated "the gentleman boxer." He was remarkably graceful in his action, quick and effective in his deliveries, and an excellent "stopper," hitting with his right and stopping with his left, the very opposite of the tactics of modern professors. Mendoza was a pupil of Humphries, but soon proved himself his superior, and hence took the lead.

4039. *At this period, 1786*, the sports of the ring received a new impetus. Royalty again condescended to throw its shield over the old *national game*, and men of the highest rank and consequence in the kingdom not only frequented the schools of the teachers, but encouraged and were present at those "prize-fights" which became the rage, and were attended by thousands and tens of thousands of all ranks of his majesty's subjects. A fight between *Humphries* and a man named *Martin*, styled "the Bath Butcher," which took place on a stage at Newmarket on the 3d of May, 1786, created extraordinary interest, and was attended by their royal highnesses the Prince of Wales and the Duke of York, the Duke of Orleans, and most of the French nobility who were then in England. A guinea was the price of admission to the combat, a sum which hundreds willingly paid, and it was calculated that from thirty to forty thousand pounds were hazarded on the event. It was a finished display of science on both sides, terminating in the defeat of Martin; but such was the man-

liness displayed on both sides, that the winner and the loser seemed alike to have secured the "golden opinions" of the spectators.

4040. *All eyes were now directed towards a trial of merit* between Humphries and his formidable pupil Mendoza, and as "where there's a will there's a way," means were soon found to bring their pretensions to the test. A match was made for four hundred guineas, to come off on a four and twenty feet stage, in a pad-dock at Odiham in Hampshire, on the 9th of January, 1788. The interest excited was beyond all precedent, and the assemblage in point of rank and influence was little short (barring the ladies) of the splendid display at the tournament of Eglington Castle. The fight lasted twenty-eight minutes and fifty-four seconds, and was characterised by a degree of skill and dexterity, accompanied by a severity of punishment, which was never before witnessed. The fluctuations were numerous, each in turn becoming the favourite, till at last Mendoza receiving "a kidney hit" on the loins, followed up by a forcible delivery on the neck, he fell with his leg under him, which was sprained, and was unable to come again, thus giving the victory to Humphries. It was extremely difficult to determine which was the neatest pugilist in the fight, so much of science, elegance, activity, and bottom, were displayed on both sides. Neither Mendoza nor his friends were satisfied with this result, and the men were again matched to fight on the 6th of May, 1789, in Mr. Thornton's park at Stilton, where a suitable building was erected for the purpose, when Mendoza regained his lost laurels. It was now "trick and tie," and a third battle took place at Doncaster on the 29th of September, 1790, when Mendoza was once more victorious, thus putting an end to all doubts as to his superiority, although it must be admitted his success was not bought without serious punishment. This was the last battle of Humphries, but his correct deportment secured him general respect, and he afterwards became a coal merchant, and obtained a comfortable livelihood. The newspapers at this period were filled with accounts of these combats; and such was the interest they excited, that they were looked for with the avidity of a "London gazette," announcing the issue of some battle on which the fate of empires depended.

4041. *If encouragement were wanting*, a new impetus was now given to the boxing academies, and pupils of the highest grade crowded to "the professors," among whom Mendoza took a deserved lead, and had the honour of setting-to and giving lessons to some of the most illustrious men in the kingdom. An anecdote has been told us by a gentleman who was one of Mendoza's constant pupils, strongly illustrative of the advantage of science, and of the affinity which exists between the natural and the artificial weapon. A celebrated French fencing-master, who had been drawn to Mendoza's school, and saw him set-to, was so struck with his tact and quickness in parrying the heaviest blows, that he said he wanted but a little tuition in fencing to render him a perfect master of his art, and for this purpose offered to give him a few lessons with the foils. Mendoza consented, and in a very short time acquired so much knowledge of the art of throwing aside a coming blow by a simple action of the arm, that he acknowledged, with gratitude, the benefit he had derived.

4042. *At this season*, independently of the schools, the theatres were constantly the scenes of sparring exhibitions, and crowded audiences proved the great popularity of the sport, boxes, pits, and galleries being invariably thronged on such occasions.

4043. *The modern or third era of science.* The pride of Mendoza, like that of Broughton, was destined to have a fall—he in turn was to be driven from his "high estate." However perfect in his art, the march of improvement was progressive. A new star arose in the milling hemisphere. This was Mr. John Jackson, who may with truth be pronounced the father of the *modern school* of boxing, and who not only supplanted the Jew, but took a higher position in the scale of society, and obtained more influence among all ranks, from the peer to the peasant, from the firmness and urbanity of his manners, combined with the finished requisites of a boxer, than any man by whom he had been preceded, or by whom he has been followed.

4044. *Mr. Jackson was born in London*, and was the son of an eminent builder, by whom the arch was thrown over the old Fleet Ditch. His uncles were farmers and tenants of the Duke of Bedford and the Marquis of Hertford. Nature had bestowed upon him all those athletic requisites which constitute the *beau ideal* of perfect manhood. There was a happy combination of muscular development, with proportionate symmetry in his frame (his height was five feet eleven, and his weight fourteen stone), which rendered him a fitting model for the sculptor, and excited the admiration of all those by whom these qualities are appreciated. At the age of nineteen he became a frequenter of the sparring schools, and soon displayed such talents as proved that he was destined to eclipse the more favoured of his contemporaries; added to which, possessing as he did the *suaviter in modo*, as well as the *fortiter in re*, he soon found patrons of the highest grade.

4045. *Mr. Jackson's first public contest*, under the patronage of the Hon. Harvey Aston, was with Fewterel, a Birmingham hero, on the 9th of June, 1788, in a roped ring near Brighton, which was honoured by the presence of the Prince of Wales. Victory crowned this maiden effort, and Mr. Jackson received a gratifying token of approbation from the prince. His next effort was with George the Brewer, on the 12th of March, 1789, in which he was defeated at the moment when conquest was within his grasp, from slipping down on the stage, owing to the awkward construction of the floor, and its humid state from the falling rain, dislocating his ankle, and breaking the small bone of his leg. He offered to finish the battle while tied to a chair, but this was not permitted. His third and last battle was with the redoubtable Mendoza, at Hornechurch in Essex, on the 15th of April, 1795. It was a short but fierce battle, but in nine rounds, and four minutes and a half, Jackson was the victor, jumping from the stage little the worse for wear, while Mendoza was very much beaten, and dreadfully exhausted. The Duke of Hamilton and a vast number of noblemen and gentlemen were present, and testified their high admiration of the scientific precision evinced by the winner, while they sympathised in the overthrow of a man who had so long enjoyed "the sunshine of fortune," and which it is to be lamented he did not yet know how to secure by a due sense of his own position, and a proper respect for those who, from principle, gave liberal encouragement to his "calling." Independent of his pugilistic superiority, Mr. Jackson was distinguished for his extraordinary powers as a runner of a short distance, and as a leaper no man of his day was equal to him at a standing jump, of

which many extraordinary feats are on record. His muscular strength was equal to his bodily activity, and in the presence of Mr. Harvey Combe, a never shrinking advocate for the national sports of his countrymen, he lifted *ten hundred weight and a quarter*, and with eighty-four pounds' weight on his little finger wrote his own name.

4046. *Mr. Jackson's Rooms.* The high reputation which Mr. Jackson had now attained, and the universal esteem in which he was held as a teacher of his art, led him to establish rooms at No. 13. Bond-street, not only for giving lessons to his numerous pupils, but for the introduction of such men as had either distinguished themselves in combat, or were desirous of seeking fame in the pugilistic arena. Here all the *élite* of the fashionable world—men who have since distinguished themselves in the senate, at the bar, and in the field, and viewed boxing as a national game pregnant with the best consequences, where the manly vigour of their countrymen was to be encouraged and promoted—were daily assembled; noblemen and gentlemen of the highest rank did not disdain to take the gloves with the accomplished Jackson, and the “sets too” even among themselves evinced a knowledge of the science, a power of endurance, and a degree of vigour equal, if not in many instances superior, to the public pugilists of the time, with whom they often “tried their hands,” and came off victorious; qualities, the value of which, in after life, they acknowledged when the roar of battle, or the death struggle with the foes of their country, by land or by sea, required the exercise of those energies which the preparative practice of Jackson's rooms had nurtured and developed. In these associations there was none of the finikin foppery of modern times; there were no apprehensions of the derangement of well curled locks or pretty faces; men, and noblemen too, met foot to foot and fist to fist, regardless of consequences, dealing such blows on each other's heads, as often deprived them of momentary sensation.

4047. *Mr. Jackson's mode of instruction* was at once philosophical and practical. Himself the most accomplished boxer of his day, he knew the principles upon which attack or defence were to be conducted; and these he explained, not by showing results, but by demonstrating “cause and effect” with a master mind and a master hand. He taught his pupils to feel that personal confidence and contempt of danger were the first and best qualities of a pugilist. He showed them, that to hit with effect they must first judge their *distance*, that is to say, to judge when the delivery of a blow would produce the most conclusive consequence; for, as he properly inculcated, if a blow reached its destination short of the weight and vigour of the muscle by which it ought to be propelled, like a spent shot it was of little avail, and had better not be attempted. He showed that men ought to fight as well with their legs as with their hands; and that unless they were quick and active with the former, so as to spring in and out as opportunity demanded, the intent of the latter would be altogether frustrated. He derided all stiffness of position, and showed that the impulses of nature were always best aided by that light springing ease, which in the ordinary movements of man, when uninfluenced by the posture master, were obvious and inherent. He showed, that with the body a little bent, the head and shoulders forward, and the knees in like manner elastic and easy, and with the hands well up, a man was prepared for advance or retreat, as the quickness of his eye and the exercise of self-possession might suggest. “Head after all,” he said, “was the fulcrum from which all men ought to act. Here the general issued his orders; here the *pros* and the *cons* were scanned, and the order to hit or to stop, to step forward or step back, was issued with firmness and must be obeyed with precision. The limbs must all be ready for the call, and he who took advantage at the right time was sure to bear off the prize.” *Ambi-dexterity*, that is, the power of hitting and stopping with the left and the right with equal quickness, he also strongly inculcated, and by his own example showed, that he could stop the “one two” (hits with both hands) either with his right or his left hand, and either return with the same hand, or bring in the reserve fist with stunning force. He clearly showed that fighting at the body was a dangerous game; for, with a well instructed pugilist, he who attempted it was sure to be met in the head before his knuckles reached the body of his antagonist, and with double force too, because he gave the impetus of his own rush to the coming blow. These lessons were conveyed in a way to produce conviction; for, as Mr. Jackson defied any man to hit him, he always called upon his pupil to try his own tactics, and the issue invariably verified the truth of his axiom, whatever it might be.

4048. *Shaw, the life-guardsmen.* This was singularly demonstrated in the case of Shaw, the life-guardsmen, whom Mr. Jackson taught in his rooms. Shaw was a natural genius, who in his regimental exercises evinced so much strength and vigour as to attract the attention of his officers. He stood six feet and half an inch in height, and weighed fifteen stone. *Jem Belcher* was the first to discover this “wild flower,” when yet a “bud,” in a turn-up with a heavier antagonist than himself at Woolston, in Nottinghamshire, of which village he was a native. Belcher was accidentally present, and seeing that the youth only wanted “a leaf out of his book,” he stepped up, and gave him such hints as soon enabled him to turn the scale in his favour, and humble the “bounce” of his opponent. The praise bestowed on him on this occasion by Belcher no doubt sowed the seed which afterwards flourished with such pure British luxuriance. He became a life-guardsmen, and, as we have said, attracting the notice of his officers, most of whom were admirers of the sports of the ring, he was introduced to Colonel Barton, and by him was encouraged to “show” at the Fives-court, in Little St. Martin's-street, then the principal theatre for public sparring, where he gained experience by setting-to with some of the first practitioners of the day. As “a star” of promising magnitude, he was introduced to Mr. Jackson's rooms. In a set-to with Captain Barclay, who like Captain Godfrey never shrunk from punishment, his length and weight enabled him to plant a blow by which the ribs of

the captain were dislocated, thereby fully satisfying him that he had no commoner to deal with. Mr. Jackson was now requested to take this new candidate in hand, and soon discovered his defects. Shaw, on catechetical examination, told Mr. Jackson he was "a main good un at the goots;" that is to say, he could plant his body blows with finishing effect. "Ay," said Mr. Jackson, "when you have a *yokel* (an inexperienced man) to deal with, but with a master of the art you would find that game a bad one." Shaw was incredulous; upon which Mr. Jackson put on the gloves, and called upon our hero not to mind him, but to do his worst. Shaw, having got over his *mauvaise honte*, which the presence of so many gentlemen induced, did as he was bid, and getting a little warm, tried his favourite "hit at the goots;" but in every attempt Mr. Jackson had him on the head with such severity, as not only to send his head back, but as altogether to set his "blow at the goots" completely at naught. One practical illustration is worth fifty arguments. Shaw at once admitted his error; and under Mr. Jackson's tuition soon improved so much as to be considered a man of promise, with the championship in prospect. He fought, however, only two battles in the prize-ring, the one with a big countryman named *Burrows*, at Coombe Warren, in 1812, and the other with *Ned Painter*, on the 18th of April, 1815, for a purse of 50 guineas, in which, after a tremendous battle of twenty-eight minutes, he was successful, having knocked Painter down no less than ten times. It must be admitted, however, that he had the superiority of length, weight, and condition, having been in daily training, while Painter was a prisoner for debt in the Fleet, and had only come out upon a day rule. Such was the influence of this victory however upon Shaw, that he challenged *all England*, and no doubt would have had to encounter *Tom Cribb*, the champion of that day, but for his call to a field, the memory of which will ever live in the page of history and in the hearts of Englishmen—we mean the field of *Waterloo*! He departed with his regiment to join the Duke of Wellington, was present on the first day of the battle of Waterloo, and was wounded in the breast; but on the glorious *Eighteenth of June* he could not be restrained from joining his gallant comrades, and in the last overwhelming charge which decided the fate of that day, our hero was seen in the thickest of the battle mowing down the enemies of his country like chaff, and actually killing or disabling ten cuirassiers with his own trusty sword, wielded by the sinewy arm and lion heart of a *British pugilist*, till at last that fatal antagonist, whose blows no man can parry, stepped in with his "finishing hit"—a pistol or musket ball penetrated poor Shaw's body, and he fell, covered with glory, leaving behind him a name imperishable in the annals of bravery, and hailed with pride and satisfaction by every man who, like himself, had sought distinction in the *national games of old England*.

4049. In *Paul's Letters to his Kinsfolk*, written by Sir Walter Scott, describing the battle of Waterloo, he thus observes:—"Amid the confusion presented by the fiercest and closest cavalry fight which had ever been seen, many individuals distinguished themselves by feats of personal strength and valour. Among these should not be forgotten Shaw, a corporal of the life-guards, well known as a pugilistic champion, and equally formidable as a swordsman. He is supposed to have slain or disabled ten Frenchmen with his own hand, before he was killed by a musket or pistol shot."

4050. *The science of the sword* Shaw also possessed in a superior degree; and this science tended much to accelerate the fortune of the day, in reducing the hitherto considered invincible French cuirassiers. We shall, perhaps, be excused for this digression; but as pugilism is our theme, it is impossible, on the name of Shaw being mentioned, that we could refrain from this short tribute to his memory, convinced as we are that his early lessons in the art of boxing tended more to improve that stamina, and confirm that bold and fearless bearing which has gained for him a deathless fame, than all the sophistry of the most consummate lecturers on the art of war.

4051. Mr. Gully, Gregson, Cribb, Oliver, Painter, Jem and Tom Belcher, Burke, Spring, Peter Crawley, Shelton, Molineaux the black, Richmond, Maddox, Turner, Jack Randall, Martin, and all the "pugilists famed in story," were frequenters of Mr. Jackson's rooms; and here their merits were discussed, and their sparring qualities put to the test, for the amusement and gratification of those distinguished characters who afterwards became their patrons; and such was the popularity the sport had now attained, notwithstanding the efforts of its enemies, who were as rife in those days as they are at present, that it was countenanced by men of the first distinction.

4052. *The Pugilistic Club*. At this season a club, under the title of "The Pugilistic Club," was formed, of which men of the highest rank became members. These gentlemen felt that a great *national good* was to be attained by the encouragement of those sports, by which the moral energies of the people were to be developed and promoted. They saw that precept without example, especially among the classes to whom they looked, was mere *moonshine*, and therefore they manfully stepped forward, regardless of the *cant* by which they were assailed, to carry out the principles which they approved.

4053. *A meeting was held at Mr. Jackson's rooms*, at which the objects and purposes of the club were developed, rules and regulations were adopted, and subscriptions contributed, which upwards of one hundred and twenty members agreed to continue annually; nay, even a *uniform*, which consisted of blue coats, yellow kerseymere waistcoats, with the letters *r. c.* engraved on the buttons, was adopted and worn on all public occasions. A regular treasurer and secretary was appointed; and from the fund sums were awarded, either to promote matches, or to offer separate prizes, which varied from 50 to 10 guineas.

Ropes and stakes to form the fighting ring were also purchased, and made of the best materials. The stakes, eight in number, were capped and shod with iron, distinguished at the tops with the letters *r. c.*, and were entrusted to a well known character, *Bill Gibbons*, who was appointed "the commissary of the Faucy," and took his instructions from the secretary as to "the when" and "the where" his *matériel* were to be called into use, being provided with a swift horse and a "drag," to convey them to and from the place of destination. A fee proportioned to the distance was paid him out of the funds of the club for his labours, in which he always found willing assistants.

4054. *This club held its first meeting at the Thatched House Tavern*, St. James's-street, on the 22d of May, 1814, Sir Henry Smith, Baronet, in the chair. Upwards of fifty members sat down to a sumptuous dinner, to which Mr. Jackson, Mr. Gully, Tom Cribb, Tom Belcher, Oliver, and others, were invited. The scene was altogether most gratifying; and Lord Yarmouth (afterwards Marquis of Hertford), who was present, in a speech distinguished for sound reasoning and manly eloquence, expatiated on the great advantage of pugilism in a national point of view.

4055. *These may be considered as the palmy days of the ring*; but previous to this date, and subsequent to the defeat of Mendoza by Mr. Jackson, a great number of pugilists were introduced to the notice of the amateurs, all of whom repeatedly fought, and attracted the attention and received the countenance of men of rank, including the Dukes of York and Clarence, the Duke of Queensbury, the Earl of Albemarle, the Earl of Sefton, the Marquis of Worcester (the late Duke of Beaufort), Sir W. W. Wynne, the Marquis of Tweeddale, Lords Byron, Craven, Somerville, Barrymore Pomfret, and Fife, Colonel Berkeley (afterwards Earl Fitzhardinge), Harvey Combe, Squire Harrison, and others too numerous to mention, but all tending to show the high auspices under which the sports of the ring flourished and were encouraged.

4056. *As correct historians*, we must not attempt to disguise, that even in those times strong prejudices existed in the minds of some against the display of pugilistic powers. Fights were often interrupted by the magistrates, many of the professors were arrested and prosecuted, and among so many battles some lives were occasionally sacrificed. These occurrences were purely accidental, and arising from the casualties inseparable from the nature of "the game;" but we doubt whether in other sports more peaceable, such as hunting, shooting, cricket, wrestling, and horse-racing, the proportion of fatal accidents were not at least as numerous, if not much more so, and would have furnished as strong an argument for the suppression of the one sport as the other; for as far as malice was concerned, it must have been known that two men, entering "the ring" in fair competition for fame, had as little malice towards each other as two jockeys in a race, or any other two competitors in the exciting sports of our country.

4057. *In referring to the descriptions of the doings of the men and their contemporaries*, to whom we have alluded, and which will be found amply detailed in *Boxiana*, it will be seen that some of the most remarkable battles were fought upon "Moulsey Hurst," which, from its proximity to town and local advantages, being as it were isolated from all habitations, was much frequented; and as an additional reason for this choice, we may mention the proximity of "Bushy," the residence of the Duke of Clarence, under whose fostering wing as it were, for he was frequently present, more impunity was enjoyed.

4058. *The formation of the Pugilistic Club* may be said to have commenced a *new era*, in which there was a combination of order and regularity in the proceedings of the *Fancy*, as the followers of the ring were called, which was productive of great advantage; and although all matches did not originate with the club, their countenance and sanction were sought, and their ropes and stakes, under the guidance of "the commissary," were invariably brought into use.

4059. *Sparring before kings and princes*. About this period an event occurred which gave additional lustre, if the phrase may be allowed, to the pugilistic school. It may be in the recollection of our readers, that in the year 1814, in the short peace previous to the return of Buonaparte from Elba, the Emperor of Russia, the King of Prussia, and other illustrious foreigners, paid a visit to the Prince Regent. Among other sports, characteristic of our country, they had heard much of our "boxing fame," and expressed a strong desire to witness a sparring display among some of the most celebrated professors of the day. This wish was at once gratified by Lord Lowther, who applied to Mr. Jackson to select the *dramatis personæ*, and a day was fixed for their assemblage at Lord Lowther's house in Pall-mall. On this occasion the Emperor of Russia and Generals Platoff and Blucher were present. This was on the 15th of June, 1814. The setting-to was among some of the best men of the day; and the rules of British boxing were explained in so clear and satisfactory a manner to the distinguished group, that they expressed their warm approbation at so manly and generous a manner of settling personal quarrels; and indeed were so delighted, that they requested the exhibition might be repeated on the following Friday, when, in addition to the above visitors, the King of Prussia, the Prince Royal of Prussia, the Prince of Mecklenburgh, General D'York, and several others, were present. Some admirable specimens of the *Art of Self-defence* were displayed by Mr. Jackson, Belcher, Cribb, Richmond, Painter, Oliver, and others; the *sets-to* were in general excellent; and the skill of Mr. Jackson excited general admiration, while the symmetry of his figure and fine muscular development did not pass unnoticed. Tom Cribb, then "the Champion of England," also had his share of observation, and particularly attracted the notice of Blucher. The royal guests and their attendants expressed the great gratification they had experienced, and upon taking their departure complimented Lord Lowther as the patron of so manly and praiseworthy a trait of the national sports of his country. Little did this splendid group foresee that, on the first anniversary of that meeting, one of that very class whose evolutions they had then witnessed would, in the field of Waterloo, and almost under the eye of Blucher, afford an additional illustration of the great advantage to be derived from the preparatory inductions of the prize-ring. We may here remark, that similar exhibitions were subsequently got up for the amusement of other of our foreign visitors; and that a very few years back, at Mr. Angelo's rooms in St. James's-street, the Prince of Orange and his two sons, at their own particular request, were similarly gratified, and were

not less warm in their expressions of approval and acknowledgments of the great advantages to be derived from the promulgation and encouragement of such sports with their noble and manly principles.

4060. *The Fives-court* in Little St. Martin's-street was the "high change" of the *milling* circles, both *Corinthians* and *Patricians*. This building has long since been swept away in the march of metropolitan improvements; but for many years it was the gymnasium in which aspirants to future fame made their public *début*, as well as the *stage* on which established favourites displayed their points and their perfections in the fistic art. It was a large oblong court with high walls, the light being admitted through interstices at the top, covered with network necessary to prevent the loss of the balls in the games of fives and tennis, which were here practised to a great extent by some of the most celebrated literary men of the day, who could thus in a short time concentrate a degree of exercise equal to three or four hours' hard walk elsewhere, thereby saving time, which, to a man whose "time is his marketable commodity," was of no small importance.

4061. *The principal occasions on which the court became the focus for the professors of boxing* were those on which *benefits* were taken by public favourites, and these were generally either immediately before or after some great battle. Placards and hand-bills were put forth, announcing "a treat for the fancy," and specifying the names of those heroes whose boxing qualifications entitled them to distinction. Tickets were distributed at 3s. each, the regular price of admission; and large as the area was, it was frequently crowded to suffocation. A small elevated dressing-room at one end, with a window looking into the court, was the place set apart for the aristocracy; and here was often seen congregated some dozens of noblemen and persons of high rank, whose liberal contributions (many of them giving a guinea for a ticket) added greatly to the receipts of the *beneficiare*, who usually stood at the door of entrance himself, with a capacious money box to receive the cash. Many of these benefits have been known to produce little short of 200*l*.

4062. *A stage was erected in the centre of the court*, about four feet from the ground, upon which the sparring *bouts* with the gloves took place; and care was taken so to match men, according to proficiency and weight, as to enhance the interest of the exhibition. The men were usually stripped to their waists, so that the full development of their muscular powers was perceptible, and every movement could be accurately appreciated. The sports commenced with the third and fourth rate performers, with an occasional display between two *roughs* (novices), who indulged the spectators with a glove fight, "drawing corks," and administering contusions, which frequently led to remunerating showers of *copper*, often agreeably relieved by the lights and shades of *silver*. The scale of merit gradually ascended to the *stars*, who vied with each other to show the perfection of the art, and many distinguished competitors often "fought their battles o'er again," drawing down thunders of applause. The amusements usually closed with a "wind up" between the man whose benefit was taken and some chosen antagonist. The former, before he set-to, in a pithy if not an eloquent speech, returned thanks for the honour conferred upon him. Many new men here made their bows, and laid the ground for future matches. Challenges were given and accepted, and appointments made at some sporting house, usually kept by a retired pugilist, to draw up articles, deposit the stakes, and agree upon time and place. At these meetings the house of rendezvous was thronged to excess, the backers of both men attending to settle the preliminaries, as well as their respective admirers, when bets were often made to an enormous extent—the cash, among strangers, being deposited in the hands of the host, who kept a book for registering his receipts.

4063. *The Tennis-court*. At a later period of our history, in consequence of some jealousy, a *split* took place among some of the "great actors," and a rival benefit establishment was adopted at the Tennis-court in Windmill-street, which after the Fives-court had been pulled down, became the only arena for such purposes, with the exception of occasional displays at the public theatres, which were often most attractive, and not less profitable. The "minor fry" usually took benefits at public-houses. It does not appear, however, that wisdom followed experience; for as time progressed, there was a gradual falling off in the character of the exhibitions at the Tennis-court. Men were announced to *set-to* who never made their appearance—a contemptible spirit of rivalry arose—the competitors were unequally matched—gentlemen disposed to uphold the principle of boxing became disgusted, and gradually withdrew their patronage—the boxing men suicidally destroyed "the goose which laid the golden egg," and at last benefits ceased to be profitable, and the Tennis-court having been let by the proprietor for the purposes of a theatre of another description, the *milling* fraternity lost their "local habitation" and almost "their name," a result attributable solely to themselves, a fitting issue to a false pride, which the generous indulgence of their patrons but too frequently engendered.

4064. *Patriotic and humane character of the boxing fraternity*. Although truth obliges us thus to record the approaching "decline of the *milling* empire," we must "try back," and "render unto Cæsar that which is Cæsar's due." To the credit of the professors and patrons of boxing, they were never "backward in coming forward" to aid the work of charity, or to answer those appeals to public sympathy which the ravages of war, the visitations of Providence, the distresses of trade and commerce, or the afflictions of private calamity, frequently excited. Under the active auspices of Mr. Jackson, who was ever foremost in drawing forth the brighter features of his "companions in arms," benefits were frequently got up to meet existing exigences: thus "the starving Irish," "the British prisoners in France," "the Portuguese unfortunates," "the suffering families of the heroes who had fallen and bled on the plains of Waterloo," "the famishing weavers, and the claims of widows, wives and children whose misfortunes had been occasioned or aggravated by the casualties of the ring," with other instances too numerous to detail, afforded opportunities for appeals which were never made in vain. It was then that the generous spirit which warmed the heart of a true British boxer shone forth with its sterling brilliancy; then all selfishness was set aside, and no sooner was "the standard of charity" unfurled, than every man who could wield a fist, from the olden veteran to the youngest practitioner, rushed forward, anxious and ardent to evince the feelings of his soul, and to lend his hand to the work of benevolence. There were then no skulkers, no humbugging apologies; and the difficulty only was to keep within compass the host of talent which stood forth nerved at all points to "do battle" in aid of such purposes. Hundreds and hundreds of pounds have been thus raised, large sums have been handed over to public subscriptions, and in private the tears of the widowed mother, and the cries of starving children, have thus been dried and hushed by the generous contributions of the boxers of England and their staunch and liberal admirers.

4065. *In granting rewards to merit*, equal generosity has been displayed. The valiant but unsuccessful pugilist never went without "a healing salve" to his bodily and mental wounds. At the conclusion of every fight, Mr. Jackson went round, "hat in hand," to raise a subscription for the beaten man. Never was this appeal made in vain; and in proportion to the qualities exhibited, his collections became successful, in many instances the loser actually receiving as much as the winner, a proof that *honest* valour never went without its consideration. Even Mr. Jackson himself participated in this noble trait in the character of pugilistic amateurs, for in the year 1820 a service of plate of the most magnificent description was presented to him of the value of 300 guineas, to which all ranks contributed, from the prince to the prize-fighter. In like manner were *silver cups* subscribed for, and presented to the leading members of the ring, including Tom Cribb, Tom Spring, Ned Neal, Josh. Hudson, and others, which on all public festivals at their respective houses stood prominent in the decorations of their tables, and are often filled with generous wine, and emptied to the ever welcome toast, "*Success to British boxing, and its honest and honourable principles!*"

4066. *Temporary decline of the ring—its history in modern times*. We have already said that the period of the establishment of "The Pugilistic Club," in 1814, might be termed "the palmy days of the ring," and we shall now briefly refer to its history from that time to the present. It would be foreign to our purpose to introduce the names of the numerous new competitors who, subsequent to 1814, "strutted their hour upon the stage," or "illuminated the *milling* hemisphere;" we shall hereafter refer to those authorities where their

deeds will be found duly chronicled; but it may be as well to say, it was after this season that *Tom Spring* who succeeded *Tom Cribb* as "Champion of England," and *Jem Ward*, who followed *Tom Spring*, made their appearance; as did *Jack Langan*, with whom *Spring* closed his fighting career; *Jack Randall*, truly called the *Nonpareil* of the middle weights (ten stone seven pounds); and *Dick Curtis*, the *Pink* of the light weights (nine stone), and denominated "the *Pet of the Fancy*."

4067. From 1814 to 1820 the *Pugilistic Club* increased in influence and stability, fresh members were constantly enrolling, and Jackson's rooms were still the most attractive lounge at the West End of the town. Fight followed fight in quick succession, and the lively scenes and extraordinary display of what in those days were called Corinthian equipages, which followed to the scene of action, gave support to these breaches of the peace. Parish constables were idle and inert, the rural police were not in existence, and the efforts of nine magistrates who were adverse to these exhibitions would be paralysed by the quiet acquiescence of a tenth who was. So a fight once arranged was pretty sure to come off sooner or later, until it became part of the tactics to arrange different localities to which to adjourn in case of interruption at the place of meeting. These scrambles across country of lawless mobs—many of them bent on plunder—were far worse than steadily conducted fights, and did much to unpopulise and precipitate the downfall of the ring. In these hurried flights the most incongruous vehicles used to be enlisted, and we have even known a hearse put in requisition for the conveyance of passengers; for whatever the parties chose to claim they generally got, so great was their preponderance of power, and so imperative their demands.

4068. *Continued patronage of pugilists by George the Fourth.* It has been already stated, that the Prince of Wales in his youthful days was a staunch patron of boxing; and although he discontinued, by his presence, to give countenance to the sport, yet frequent indications of his desire for its promotion were observable. He was a constant reader of the sporting papers, and was familiar with the names of all the men who in succession obtained celebrity or notoriety, and upon many occasions it was known that contributions came indirectly from him, either to reward the exertions of unsuccessful valour, or to soothe the distresses of those upon whom the hand of misfortune had cast its afflictions. Mr. Jackson was ever remembered with a kindly feeling, and, when seen, honoured with a recognition. If confirmation of these facts were wanting, it was amply furnished at the period of his majesty's coronation in July, 1821. At this ceremonial, the splendour of which admitted of no parallel, an extraordinary degree of excitement prevailed in the public mind, not only from its novelty, upwards of fifty years having elapsed since a similar exhibition had been witnessed, but from an apprehension that the friends of Queen Caroline, who, it will be remembered, was excluded from the throne, might imprudently display their feelings in a way to mar the joyous character of the festival. Independent of these considerations, it was felt, from the vast multitude which would be assembled, and the amount of valuable property exposed, that more than usual care would be necessary to preserve order and restrain the lawless. Of the zeal and loyalty of the military no doubt was entertained; but as their duties were confined to the exterior of Westminster Hall, it was deemed important to select such men to guard the avenues leading to the interior as combined firmness and courage with a personal knowledge of the parties (who it was foreseen would seek admission either surreptitiously, or by means of tickets improperly obtained), and whose presence would check unwelcome or designing intruders. For this purpose, under his majesty's sanction, it was determined to employ eighteen of the most distinguished prize fighters of the day, upon whose humanity, integrity, and loyalty, his majesty was pleased to say he felt every reliance. To Lord Gwydyr (the lord great chamberlain) the task of making this arrangement was deputed, who immediately sent for Mr. Jackson, to whom his majesty's pleasure was made known. Mr. Jackson lost no time in calling in the aid of Mr. Watson (a well known amateur, and since the host of the Castle Tavern at Moorgate), and the following men were selected for the duty, which they undertook with proud alacrity,—*Cribb, Spring, Tom Belcher, Carter, Richmond, Ben Burn, Harmer, H. Lee, Tom Owen, Josh. Hudson, Tom Oliver, H. Holt, Crawley, Curtis, Medley, Purcell, Sampson, and Bill Eales*. These men were all provided with the dresses of pages, and were stationed at the different entrances, Mr. Jackson, Tom Cribb, and Tom Spring, being at the great doors of the hall, where the former received a condescending notice from his majesty as he passed to the platform on his way to Westminster Hall.

4069. *The admirable conduct of these men from first to last, not only during the ceremony, but on the subsequent day, on which the hall was thrown open to the public, when their courage and humanity were prominently exemplified, was universally acknowledged, and letters of thanks were afterwards addressed individually to each man engaged by Lord Gwydyr, his lordship adding a golden coronation medal, which he said he had received from the hands of his majesty expressly for the boxers, and which, after a dinner, also provided at his lordship's expense, was raffled for and won by Tom Belcher, who doubtless retained it as a trophy of royal favour, never to be parted with until death forced him to leave his worldly goods behind him.*

4070. *On the 18th of May following (1822), Cribb publicly resigned the championship on the stage at the Fives-court, on which occasion he was presented with a belt, and was succeeded by Tom Spring, who retained the rank till he in turn resigned, and Jem Ward claimed the distinction. With Jem Ward the honour remained till the late defeat of Deaf Burke by Bendigo alias Thompson, when the form of giving Bendigo a belt was gone through by Ward; but Bendigo was afterwards challenged to decide the right to the championship by a man of the name of Count, of gigantic size, with whom, after a great deal of correspondence, no match was made; and now (1857) we see a Mr. Tom Sayers and a Mr. Bill Benjamin laying claim to its neglected honours, which we anticipate a very short time will see extinct.*

4071. *Subsequent and previous to the coronation, a vast number of important battles took place, in which men of the highest reputation were engaged, and entitled themselves to and obtained the approval of their patrons. Unfortunately, however, cases occurred, in which there was good reason to believe that temptations too strong for resistance were held out, by which some of those men, who stood high in the list of prize fighters, were induced to sacrifice their own character to the desire of gain, and purposely to lose fights upon which large sums had been staked, thereby deceiving their best friends. That similar practices*

were had recourse to in horse racing and other sporting events, there can be no doubt; but the commission of fraud in one class can be no apology for following the example in another. The "secrets" were almost invariably betrayed when the mischief was done; and those men who for the moment received the reward of their perfidy, afterwards experienced the painful consequences of their fall, and were regarded with contempt and distrust even by their seducers, to this day carrying with them the indelible mark of obloquy, which shuts them out from that sympathy always shown towards honest worth in adversity. Although these disgraceful occurrences may not have been so numerous as many are disposed to believe, yet they were sufficiently frequent, and sufficiently mortifying in their results, to create distrust and suspicion. The more distinguished patrons of the ring gradually withdrew their countenance, the subscriptions to "the Pugilistic Club" were discontinued, and finally the club was altogether broken up. Mr. Jackson relinquished his rooms in Bond-street in 1824, and retired into private life, occupying a house in Grosvenor-street West, long enjoying the unabated confidence and esteem of his old friends. The last fight in which Mr. Jackson took an active part was that between *Simon Byrne* and *Sandy McKay* (the Irish and English champions), at Seley Forest near Stoncy Stratford, on the 2d June, 1830, when the latter was defeated and subsequently died.

4072. *It was always remarked*, that after any fatal issue to a prize battle the exhibitions in "the prize ring" were to a great extent paralysed: public prejudice was roused, and the good sense of the practitioners themselves restrained them in a pursuit which might damnify the parties who were yet to take their trials for their participation in the alleged offence. Attempts too were not unfrequently made to involve gentlemen of rank, who were present at these fatal rencounters, in the criminal proceedings which followed. This was more particularly the case in respect to McKay, and the names of individuals of distinction were "booked" for indictment should the prosecution of the principal, Simon Byrne, end in a conviction. Fortunately, Simon Byrne was pronounced "not guilty," and those threatened prosecutions were abandoned. Still the legal liability of the parties present at the fight could not be denied; and this fact again operated to render the willing patrons of the manly sports of their country more cautious in exposing themselves to the casualties which the judicial interference of certain unpaid magistrates rendered but too likely. As a proof of the disinclination of juries to expose men to the "lash of the law" for offences which were evidently the effects of accident, and not design, they have almost invariably, where a doubt could fairly be created, given the prisoners the benefit of that doubt, and acquitted them; an illustration of which was not only afforded in the case of Byrne, but of Deaf Burke, who was afterwards tried for causing the death of this very Byrne, who, by a sort of retributive justice, himself fell a victim to Burke's superior fighting qualities at Noman's Land, Herts, on the 30th May, 1833. Other instances of the like sort have occurred; and they have been the more frequent from the very severe sentences which, where men have been found guilty, were imposed both by the judges of the land at assizes, and by magistrates at sessions, the jurors often declaring, on witnessing these harsh visitations, that had they anticipated the sentences, they would have acquitted the offenders altogether. Sufficient reasons are here given for the fluctuations in the progress of prize fighting; but to these are to be added the lawless proceedings of a certain class of depredators, who are to be found at all public assemblages, and who, upon the retirement of Mr. Jackson and the exhaustion of the funds of the Pugilistic Club, from which certain old prize fighters were paid for preserving order, acted without control, broke in the ring, and in the confusion robbed the bystanders with impunity. The apprehension of personal violence was thus superadded to other causes of distaste, independent of which, these outrageous "doings" altogether shut out from the view of distant spectators, who wisely confined themselves to their carriages or waggons, the progress of the battle, and thus the chances of witnessing the details of "a fair stand-up fight" became every day less to be relied upon, and the inducements to a long and expensive journey were diminished in proportion.

4073. *The Fair Play Club.* An attempt was made, by the establishment of a *Fair Play Club*, as it was called, to resume the regularity of olden times, but the members wanted influence. That link which kept the pugilists themselves together, and which the reign of Mr. Jackson supplied, was broken, and has not since been united, although it must be admitted that many battles have been fought with comparative good order, without the effectual re-establishment, and so what with popular distaste and judicial restraint, the P. C. may be said to be at a discount.

4074. *It is not surprising that the combined causes thus detailed* — the dishonesty of some of the pugilists themselves, the decided determination of the magistrates to suppress prize fighting, and the irregularity of the class of followers to whom we have referred — should have reduced the sports of the ring to a low ebb, and operated as a check to that hardy breed of British boxers, who were in times gone by the pride and boast of their country. Those men who formerly distinguished themselves in the ring are either dead or have been absorbed into other walks of life. The major part who live have turned tavern keepers and publicans, and are now enjoying the reward of their former good character in prosperous trade. While referring to these men, it may not be uninteresting to state the singular fact, that from among them we have lived to see a *British pugilist take his seat as a senator in the House of Commons*: we allude to Mr. John Gully, whose memorable battles with Pearce (styled the Game Chicken) and Gregson, in 1805, 1807, and 1808, placed him foremost among the heroes of his day. Mr. Gully, after becoming a publican, and keeping the Plough in Carey-street, from his aptitude at calculation and quickness of perception became a speculator in turf transactions, and realised a large fortune. Having purchased an estate near Pontefract, and become the principal proprietor of the Hetton Colliery, near Sunderland, he was in 1832 elected as representative of the borough of Pontefract, and sat in the House of Commons till the dissolution in 1837, when he declined his legislative career. While in parliament he was universally respected for his straightforward and unpretending conduct, and throughout life has obtained the good opinion of all with whom he came in contact. It

would be unjust not to add, that he did not seek but was wooed by his constituents to accept the honour which he received, and would perhaps have declined the distinction, for he had no personal vanity to gratify, had he not been taunted by the Tory interest, and almost laughed into the contest which ended in their discomfiture.

4075. *Tom Cribb*, like Mr. Gully, was likewise a publican, and kept the Union Arms, Pantons-street, Haymarket. His successor in the championship, *Tom Spring*, kept the Castle Tavern, Holborn; and *Jem Ward*, who followed Spring, kept a tavern in Williamsons-square, Liverpool, from whence he returned to London; while Langan, who was the great contemporary and opponent of Spring, built a tavern in Liverpool, and realised a large fortune in the double business of publican and cattle speculator. These, however, it will be observed, are all great guns in the pugilistic ring, and their career and subsequent successes must not be taken as the general characteristics of the race. On the contrary, it is not to be denied that the lives and pursuits of too many of what are called fighting men will not bear investigation, and the name now carries no recommendation into any circle that we are acquainted with.

4076. *On looking back to the days when the above men were in their zenith*, and comparing them with the race who now hold their places, it may well be said, "The ring is in its sear and yellow leaf." There are now no "big men" to "throw down the gauntlet," or men whose names are likely to "live in story;" nor are there backers of sufficient influence or with sufficient inclination, having the means, to revive that spirit which up to the extinction of the Pugilistic Club was so apparent. The best men of the present day, with few exceptions, do not exceed ten stone in weight; and these are so scattered through the country, as scarcely to deserve the name of "class." Matches are got up by stealth, and by a combination of many backers of humble circumstances, as will be apparent to any one who will be at the trouble to go and see a fighting train or a Thames steamer starting with their precious freights. In a recent case the judges of assize had to be "shunted" while one of these flying cargoes of peace breakers whisked by to the scene of action. Now that an efficient rural police is established throughout the country, with electric telegraph wires parallel with each line of railway, we may confidently anticipate that these lawless proceedings will soon be at an end.

4077. *Some may regret this state of things* when they refer to the *new rules of the ring*, which were adopted after a fatal fight between *Owen Swift* (the most accomplished of the light weights of modern times) and a comparative novice, called *Brighton Bill*, but whose real name was *Phelps*. This fight took place near Royston, Hertfordshire, on the 13th of March, 1838; and, from the seconds, under "the old rules of Broughton," not being interdicted from carrying their men, even when exhausted, to "the scratch," terminated in the total prostration of strength in the men; for both were carried in a state of insensibility from the ground, and the latter fell a victim to over-exertion, and an effusion of blood on the brain. We fear, however, that the new rules would have but little weight with Lord Campbell or any other judge, with a verdict of "guilty" pronounced by a jury upon a prisoner in a dock on a charge of murder for killing a man in a money conflict of this sort; still less with Mr. Ketch, when he came out with the usual concomitants of what modern phraseology elegantly denominates the scaffold. Stabbing, cutting, kicking, gouging, and other barbarous practices, are all to be reprobated; but attempting to put them down by prize-fighting is introducing a remedy that is worse than the disease.

NEW RULES OF PRIZE FIGHTING.

1. That the ring shall be made on turf, and shall be four and twenty feet square, formed of eight stakes and ropes, the latter extending in double lines, the uppermost line being four feet from the ground, the lower two feet from the ground. That in the centre of the ring a mark be formed, to be termed *a scratch*; and that at two opposite corners, as may be selected, spaces be inclosed by other marks sufficiently large for the reception of the seconds and bottle holders, to be entitled *the corners*.

2. That each man shall be attended to the ring by a second and a bottle holder, the former provided with a sponge, and the latter with a bottle of water. That the combatants, on shaking hands, shall retire until the seconds of each have tossed for choice of position; which adjusted, the winner shall choose his corner according to the state of the wind or sun, and conduct his man thereto, the loser taking the opposite corner.

3. That each man shall be provided with a handkerchief of a colour suitable to his own fancy, and that the seconds proceed to entwine these handkerchiefs at the upper end of one of the centre stakes. That these handkerchiefs shall be called the colours, and that the winner of the battle at its conclusion shall be entitled to their possession as the trophy of victory.

4. That two umpires shall then be chosen by the

seconds to watch the progress of the battle, and take exception to any breach of the rules hereafter stated. That a referee shall be chosen by the umpires, to whom all disputes shall be referred; and that the decision of this referee, whatever it may be, shall be *final*, and strictly binding on all parties, whether as to the matter in dispute or the issue of the battle. That the umpires shall be provided with a watch, for the purpose of calling *time*; and that they mutually agree upon which this duty shall devolve, the call of that umpire only to be attended to, and no other person whatever to interfere in calling time. That the referee shall withhold all opinion till appealed to by the umpires, and that the umpires strictly abide by his decision without dispute.

5. That on the men being stripped, it shall be the duty of the seconds to examine their shoes and drawers, and if any objection arises either as to insertion of improper spikes in the former, or substances in the latter, they shall appeal to their umpires, who, with the concurrence of the referee, shall direct if any and what alteration shall be made.

6. That both men being ready, each man shall be conducted to that side of the scratch next his corner previously chosen; and the seconds on the one side, and the men on the other, having shaken hands, the former shall immediately return to their corners, and there remain within the prescribed marks till the

round be finished, on no pretence whatever approaching their principals during the round, on penalty of losing the battle.

7. That at the conclusion of the round, when one or both of the men are down, the seconds and bottle holders shall step forward and carry or conduct their principal to his corner, there affording him the necessary assistance, and that no person whatever be permitted to interfere in this duty.

8. That at the expiration of *thirty seconds* (unless otherwise agreed upon) the umpire appointed shall cry *time*, upon which each man shall rise from the knee of his bottle holder and walk to his own side of the scratch unaided, the seconds and bottle holders remaining at their corners; and that either man failing so to be at the scratch within *eight seconds*, shall be deemed to have lost the battle.

9. That on no consideration whatever shall any person be permitted to enter the ring during the battle, or till it shall have been concluded; and that in the event of such unfair practice, or the ropes and stakes being disturbed or removed, it shall be in the power of the umpires and referee to award the victory to that man who in their honest opinion shall have the best of the contest.

10. That the seconds and bottle holders shall not interfere, advise, or direct the adversary of their principal, and shall refrain from all offensive or irritating expressions, in all respects conducting themselves with order and decorum, and confine themselves to the diligent and careful discharge of their duties to their principals.

11. That in picking up their men, should the seconds or bottle holder wilfully injure the antagonist of their principals, he shall be deemed to have forfeited the battle, on the decision of the umpires or referee.

12. That it shall be "a fair stand-up fight," and if either man shall *wilfully* throw himself down without receiving a blow, he shall be deemed to have lost the battle; but that this rule shall not apply to a man who, in a close, slips down from the grasp of his opponent to avoid punishment.

13. That *butting* with the head shall be deemed *foul*, and the party resorting to this practice shall be deemed to have lost the battle.

14. That a blow struck when a man is thrown or

down, shall be deemed *foul*. That a man with one knee and one hand on the ground, or with both knees on the ground, shall be deemed down; and a blow given in either of those positions shall be considered *foul*, providing always, that when in such position the man so down shall not himself strike or attempt to strike.

15. That a blow struck below the waistband shall be deemed *foul*, and that in a close, seizing an antagonist below the waist, by the thigh or otherwise, shall be deemed *foul*.

16. That all attempts to inflict injury by *gouging*, or *tearing the flesh* with the fingers or nails, and *biting*, shall be deemed *foul*.

17. That kicking, or deliberately falling on an antagonist with the knees or otherwise when down, shall be deemed *foul*.

18. That all bets shall be paid as the battle money after a fight is awarded.

19. That no person on any pretence whatever shall be permitted to approach nearer the ring than ten feet, with the exception of the umpires and referee, and the persons appointed to take charge of the water or other refreshment for the combatants, who shall take their seats close to the corners selected by the seconds.

20. That due notice shall be given by the stakeholder of the day and place where the battle money is to be given up, and that he be exonerated from all responsibility upon obeying the direction of the umpires and referee; and that all parties be strictly bound by these rules; and that in future all articles of agreement for a contest be entered into with a strict and willing adherence to the letter and spirit of these rules, and without reserve or equivocation.

21. That in the event of magisterial interference, it shall be the duty of the umpires and referee to name the time and place for the next meeting, if possible on the same day.

22. That should the event not be decided on the day named, all bets shall be deemed void, unless again declared on by mutual agreement; but that the battle money shall remain in the hands of the stakeholder till fairly won or lost by a fight, unless each party shall agree to withdraw his stake.

23. That all stage fights be as nearly as possible in conformity with the foregoing rules.

4078. *The prize ring.* At the commencement of this article a sketch is given of the form and character of the arena in which prize fights take place; and on referring to that sketch, the application of some portion of the foregoing rules will be more easily understood. In the centre the men are seen in actual combat, while at the opposite corners their seconds and bottle holders are ready to pick them up the moment the round is over. On the right hand sit the two umpires and the referee, while, close to the corners selected by the seconds, sit the men in charge of the baskets, containing water or other necessary refreshment. The persons within the outer circle are generally gentlemen who, for a fee, are permitted the privilege of sitting down close to the arena, while the great bulk of the spectators are kept at a distance; and it is the duty of men appointed for the purpose to preserve this order as much as possible from first to last.

4079. *Form of articles for a prize battle.* In making matches the following is the form usually adopted, which of course is altered according to circumstances:—

"Articles of agreement entered into this 1st day of January, 1840, between A. B. and C. D. The said A. B. agrees to fight the said C. D. a fair stand-up fight in a four-and-twenty feet roped ring, half-minute time, according to the New Rules, by which the said A. B. and C. D. hereby mutually agree to be bound. The said fight shall be for the sum of One Hundred Pounds a side [or such other sum as may be agreed upon], and shall take place on [stating the day] within thirty miles of [the place and distance]. In pursuance of this agreement, ten pounds [or any other sum] a side are now deposited in the hands of Mr. E. F., who shall be the stakeholder [or in the hands of G. H. who shall transmit the same to Mr. E. F., who shall be final stakeholder]. That the second deposit of ten pounds a side [or any other sum] shall be made at the house of [name the amount of the future deposits, the days, and places in succession till the last deposit], on which occasion a toss shall take place to decide which man shall be entitled to name the place of meeting, of which one week's notice [or such other time as shall be agreed upon] shall be given to the loser of the toss. That the said deposits shall be made between the hours of eight and ten o'clock in the evening [or such other hours as may be agreed upon], and that the party failing shall forfeit the money down. That the men shall be in the ring between the hours of twelve and one o'clock [name the time], or the man absent to forfeit the battle money. That two umpires shall be chosen on the ground by each man, by whom a referee shall be chosen, to whom in the event of dispute all points shall be referred, and his decision shall be binding. That in the event of magisterial interference, the umpires and referee shall decide the next time and place of meeting, if possible on the same day. That the expenses of the ropes and stakes shall be borne mutually, share and share alike [or by the winner as may be agreed upon]. In pursuance of this agreement, we hereunto attach our names,

Witness, I. K.

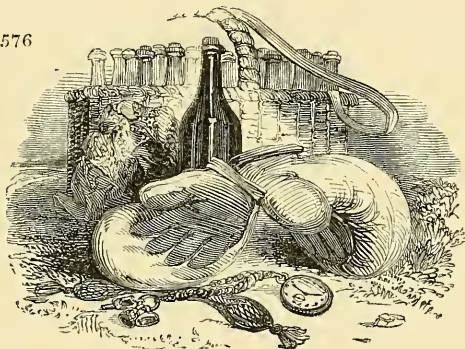
A. B.
C. D."

4080. *Last great exhibition of the art of self-defence.*—It has already been stated that, at the closing of "the Tennis-court," there was no public arena, with the exception of the theatres, or in the confined spaces to be found in public-houses, where "the Art of Self-defence," according to the practice of the ring, could be advantageously displayed. It was accidentally discovered, however, that ample space for this purpose could

be afforded at the *National Baths in the Westminster-road*, where, on the withdrawal of the water from the swimming bath, a commodious stage was erected, affording accommodation for the reception of between four and five thousand spectators. One experiment, in a benefit got up for Bressy, a provincial pugilist, proved the desirable character of the location; and an arrangement was entered into with the proprietor for having eight benefits, in the profits of which he was to be a participator. An *Association* was then formed of fourteen of the most celebrated members of the ring, who bound themselves under certain penalties to set-to on each night of performance, thus securing the certainty of scientific display. Among these men were the veteran Tom Cribb, Tom Spring, Peter Crawley, Tom Oliver, Ned O'Neal, Deaf Burke, Curtis, Swift, Tisdale, Aaron, Alex Reid, Hannan, Walker, Maley, &c. who, being aided by other members of the prize ring, embraced such a *dramatis personæ* as proved unusually attractive. The exhibitions took place once a fortnight in the evenings, the price of admission being 2s. and 1s. to different parts of the edifice.

4081. *Teachers of the Art of Self-defence.* A gentleman of our acquaintance was once indebted for a most elaborate licking to his having begun to take lessons in the noble art of self-defence. Being anxious to try his prowess, he pitched upon an unlucky opponent, and the above was the result. We forget who was his master; but among the best teachers of the art, Tom Spring, Peter Crawley, Alex Reid, Owen Swift, Dick Curtis, Hannan, and Walker, may be named. Our friend was very soon satisfied, and did not finish his course of study in that line.

4082. *Boxing and training authorities.* Our limits forewarn us to draw to a close. We professed, in the outset, merely to give a sketch of the rise and progress of British Boxing, and to that extent have we confined ourselves. But to those who may be desirous of extending their researches, we can refer with confidence to the pages of *Boxiana*, as commenced by Pierce Egan, and completed by Mr. Bee,—6 vols. in all. Also to *Fistiana*, or the *Oracle of the Ring*, commenced by the late Mr. Vincent Dowling, and carried on by his successor to the editorial chair of *Bell's Life in London*. Though differing with Mr. Dowling generally in his views on the subject of prize fighting, we yet gladly bear testimony to his high and honourable character, to his consistent disinterested zeal in the cause he espoused, and to his manly, charitable, generous, gentlemanly disposition. Sorry we are to have to close this notice of a pursuit that his pen ever adorned by stating that his life was prematurely sacrificed by his devotion to the pugilistic ring; a severe cold caught at one of these exhibitions having laid the foundation of an illness from which he never recovered. Peace to his *manes*, say we!



APPENDIX.

ON PEDESTRIAN EXERCISES.

4083. It is not out of place here to introduce, for the benefit of those who are little accustomed to a country life, but who may intend to indulge in rural sports, or a pedestrian tour for a brief holiday, some useful directions, derived chiefly from an admirable, yet unpretending, little work, entitled *Hints for Pedestrians* (Simpkin and Co. 1843.). The town-reader will derive advantage from making himself acquainted with the contents of the little treatise we quote from. Trifling as some of the particulars alluded to may at the first glance seem, by a due regard being had to them, we can assure the seeker after health and enjoyment that both these desirable possessions will be more readily attained. The excursionist should begin to train himself for his undertaking a few days before setting out, by a warm bath and a dose of gently-purgative medicine; then the condition of toe-nails, corns, and bunions, if any, should be looked into; and in winter care should be taken to prevent the access of chilblains. "Sportsmen in snipe or grouse shooting on the moors may always avoid them by a careful attention to the dryness of their feet, on return from shooting, before any refreshment is taken, and most especially before the feet are placed near a fire." Walking up and down a room after drying wet or cold feet, gentle friction with a flesh-brush, or horse-hair scrubbing brush, are to be recommended as preventive means. In summer, on the other hand, many persons are apt to be troubled with profuse perspiration of the feet, which, however, must not be summarily checked, but only moderated. Woollen stockings or socks should always be worn, and often changed; black ones should be avoided, for the dye increases the disagreeable smell. The feet should be *rarely washed*, but wiped occasionally with a moist, and often with a dry, towel. Colonel Shaw (*Memoirs of Wars in Spain*, &c.), in giving hints to those about to undertake pedestrian expeditions, says, "For some days before starting, dip your feet in hot water as often as possible for a few moments; then rub them quite dry. Let this be done morning and evening till you find the feet quite free from a damp feeling. Provide yourself with a good-sized tin box, full of soft soap. Before starting in the morning, rub the soles of the feet, especially about the heels and toes, well with the soap, until it has the appearance of a good lather for shaving, and then put your woollen stockings on. Let this be done every morning before starting, and you will find, even in the hottest or wettest weather, you will be able to do a great deal of work, and at the end of the day find your feet cool and free from blisters. Instead of washing the feet at the end of a journey, rub them first with a damp cloth, and then dry them completely." Next to the care of the feet themselves, regard their immediate clothing. Woollen stockings, knitted by hand on wires, are the best; socks are more portable, and, in so far, better where a knapsack must be carried; lambs' wool socks, "midge-socks," or merino, are the very best for the purpose. Use an "Oxford" shoe, which laces up the middle and over the instep, with an additional sole, a heel not too high or heavy, and small nails at the toes and sides. The shoes should be right and left, fully an inch longer than the foot, broad at the toes, and, if possible, of soft supple well-tanned leather; if they fail in the last particular, they ought to be repeatedly well oiled. A plaided shooting jacket, especially when its numerous pockets may supply the place of a knapsack, a silk night-cap, a double-breasted waistcoat, gambaroon trowsers, calico shirts, Woodstock gloves, a cloak of some description, and a cap or hat, complete the rest of the pedestrian's costume. A good light cane or umbrella is, according to taste, an appendage of no small importance. In a pedestrian excursion, the proper allotment of the amount of exercise for each day is of the greatest consequence: it will always be well to limit the first and even the second day's travelling to something under what may generally be effected without discomfort; thus, those who can accomplish twenty miles in a day's walk, should begin by no more than a dozen or fifteen, and they may walk twenty on the next, and perhaps twenty-five on the third day, and increase a little on each day after without inconvenience. The little work from which we quote has some hints for the times and constituents of meals, which we may

pass over. As regards quenching the thirst on the road-side, we may extract the following remarks:—"Drink as little as possible of anything, and do not give way to the first sensation of thirst. Be not always tempted by the crystal fountains you may meet with, being yourself warm. Rinsing the mouth with cold spring water, and the use of a soft tooth-brush, are refreshing and quenching to the thirst. To thirsty men, drinking water only gives momentary relief; but if the legs are wetted, the relief, though not at first apparent, positively destroys the pain of thirst." The undrinkable water of muddy pools may, therefore, be made available, the legs being plunged in and out of the water two or three times. The same author recommends "singing or shouting as you go along," as goodly exercise for the lungs of the pedestrian, while crossing some open moorland. Swimming scarcely comes under the denomination of a field sport; yet, as sportsmen in their adventures by field are liable to accidents by flood, we may find a place for the few following hints with respect to their position in deep water. Should an individual who *fears* he cannot swim (for this is a fallacy, if he will but inflate his chest well) find himself in danger of drowning, let him immediately float on his back, keep his chest full of air, and his hands in the water, and neither plunge nor struggle; finally, he is safe if he maintains a collected mind. To save a drowning person demands more technical knowledge. "A swimmer who may attempt to preserve the life of a person in the water by bringing him to shore must avoid getting within such struggling person's reach, or he will in all probability lose his own life in the attempt rashly to save that of another. Let him remember, then, to avoid the *death-grasp*, as it is called, of the drowning, for it can *seldom* be *quitted* when once fastened, and both go down inevitably! The way is to swim round till their plunging slackens, and they rise to the surface of the water generally for the last time, when you must go *behind* them—never *before* them; seize either the back of the neck, or even a lock of the back hair will be quite sufficient to hold them and to urge them before you to shore—holding by one hand and swimming with the other. Parties should practise swimming with either hand alone, and they will be more fitted, having tested their own resources this way, to rely upon their ability for any attempt to rescue others. Sometimes the foot can be readiest seized; this will do, though not so well. Always keep clear of their arms and hands, with one exception perhaps—the back of the arm, or grasping the shoulders round and under the armpit from behind. They must be made your prisoner in one of these ways, which are the chief, or else you may be made, however unintentionally, theirs, which is fatal to both. A person had better not jump in to help, under the promptings of a noble anxiety, unless he can with presence of mind put these precautions into practice."—*Hints for Pedestrians*, pp. 102-3.

4084. Reverting for an instant to the subject of clothing, and here particularly addressing our observations to those who are little practised in field sports, we may call to mind that a great object of the sportsman is to remain at all times unseen by the game he pursues. Mr. St. John (*Tour in Sutherlandshire*, pp. 249, 250.) remarks that nothing is less noticeable on a hill-side than the common shepherd's check of a small pattern, which has at a distance an indistinct grey colour, difficult to distinguish from grey rock, and accordingly of this kind of stuff, a small-sized black and white check, he recommends the sportsman's outer covering should consist—at any rate in that part of the north to which his remarks bear reference. In other districts, and at different periods of the year, clothing of a different hue may properly be worn, it being always borne in mind that to screen the sportsman from the observation of his game, his dress should be as nearly as possible of the colour of surrounding objects.

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